HAWKJAW

OPERATION, MAINTENANCE AND SERVICE MANUAL

MODEL 65K-2GJR

Serial # 10 - 20

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Introduction

Hawk's design philosophy is simple: Design with the end user in mind. Make it tough, dependable and easy to maintain.

Hawk has designed the HawkJaw with this same simple formula.

FEATURES

The HawkJaw 65K-2GJR is a hanging unit that will spin, make up and break out drill pipe. It is revolutionary because the tool spins and makes up drill pipe or breaks out and spins drill pipe in 12 seconds or less. A patented self-energized grip system provides consistent torque values to the drill string. Consistent torque ensures that wash outs and "post tightening" down hole do not occur under normal conditions.

A patented adjustable wrench system eliminates the need for separate jaws, spinning wrench rollers or gripping dies. The HawkJaw's modular design enables the unit to be maintained on the rig floor.

SAFETY

The HawkJaw 65K-2GJR provides a fast, safe and efficient method of spinning and make up or break out and spinning. It eliminates costly and dangerous spinning chain and rig tong accidents.

TIME AND LABOR SAVINGS

The HawkJaw improves trip time over any comparable torquing and spinning device in the industry. The unit easily adapts to any land or offshore rig because it hangs in the derrick. Handles mounted near the control buttons enable one rig hand to move the hanging unit on and off the pipe.

Control buttons are used to grip, torque and spin drill pipe. Drillers and operators of the HawkJaw 65K-2GJR work more efficiently and suffer less fatigue on long round trips. The unit saves trip time because the HawkJaw breaks out and spins in 12 seconds or less, and makes up and spins in 10 seconds or less. Crew fatigue is reduced, pipe is properly torqued and the work is efficient.

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Warranty

HAWKJAW 65K-2GJR
STANDARD WARRANTY AND FIELD SERVICE

Your Hawkjaw must be free of material and workmanship defects for a period of six months from the date of delivery. If any items fail because of a manufacturing defect within that period of time, that item will be replaced by Hawk Industries. Hawk Industries at its discretion may extend this warranty period.

Replacement of parts will be accomplished either at the factory or at a designated service point. This guarantee does not include the replacement of parts where failure occurred due to normal wear and tear or misuse of the tool. Defective parts must be inspected by Hawk Industries, at its Long Beach plant, before warranty can be honored. Customer must obtain an RGA# (Return of Goods Authorization) from the California, USA factory.

Hawk Industries' liability is limited to replacement of defective parts only and does not include the cost of labor, communications, transportation or handling connected with the replacement of such parts.
Hawk Industries will in no event be liable for consequential damages or contingent liabilities arising out of the failure of any parts to operate properly.

No expressed, implied or statutory guarantee other than herein set forth is made or authorized to be made by Hawk Industries.

CAUTION

Factory specifications for hydraulics, pneumatics, lubricants, adjustments and safety precautions as set forth in the operation and maintenance manual are for the mutual protection of the owner of the HawkJaw 65K-2GJR and the company. Failure to adhere to these specifications can reduce the efficiency or life of the equipment and/or cause bodily injury.

Warning

The Hawkjaw includes specially modified valves, fasteners and other components for extreme environments and service. Any attempt to substitute standard components could reduce reliability and performance, void the warranty and/or cause bodily injury. Any modification made by any third party without express written consent of Hawk Industries Inc. shall nullify the existing standing warranty.

Specification Sheet

DIMENSIONS

DEPTH: 34 in.
WIDTH: 40 in.
HEIGHT: 90 in.

PERFORMANCE AND POWER REQUIREMENTS

TORQUE:	65,000 ft. lbs.
MAXIMUM PIPE ROTATION:	50 degrees
WRENCH SIZE RANGE:	3 1/2" – 8" OD tool joints
SPINNER SIZE RANGE:	3" – 5 1/2" OD tube
AIR POWER SOURCE:	100 psi @ 2-10 cfm
HYDRAULIC POWER SOURCE:	2,500 psi @ 20-35 gpm
HYDRAULIC POWER SOURCE TYPE:	Closed Center System
WEIGHT:	2,630 lbs.
GRIP, SPIN, MAKE UP & RESET CYCLE TIME:	10 sec. or less
GRIP, BREAK OUT, SPIN & RESET CYCLE TIME:	12 sec. or less

Ordering Instructions

All parts must be **ordered by** giving the **quantity needed**, the full **part number** as listed in this manual under Part #, the unit **serial number**, the **model number** and **part name**.

Example

Quantity	Part #	Serial #	Model #	Part Name
2	061-20194	01	65K-2GJR	Die
3	061-J26	01	65K-2GJR	Grip Cylinder
1	031-24CHAIN	01	65K-2GJR	Chain

Installation

Hanging Cable Location

1. Anchor the hanging cable to a point as close to the derrick crown as possible. The longer the hanging cable, the easier the HawkJaw is to move on and off the drill pipe.
2. **Locate** the **cable hang point** as **high above** the center of the rotary table as possible. The cable must hang within 2'-4' ft. of the **rotary table center**.

NOTE

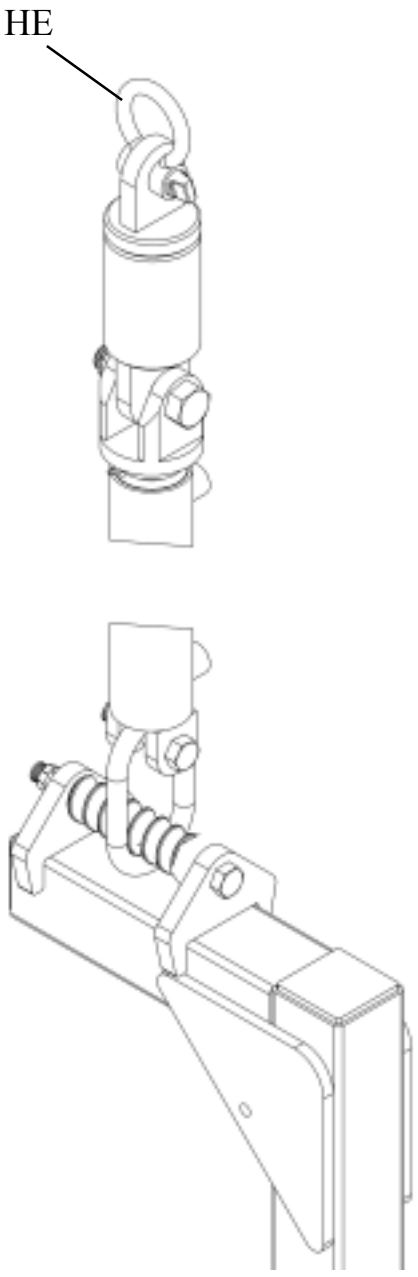
The hanging cable must permit the HawkJaw to move from the drill pipe connection to the mouse hole connection to the HawkJaw rest position (3'- 5' away from the rotary table).

HawkJaw Location

1. **Place** the HawkJaw on the **side** of the **rotary table** away from the **setback zone**. This allows the **drill pipe stands** to **swing straight** from pick-up to stabbing.
2. If possible, **place** the HawkJaw on the **opposite** side of the **setback zone**. If the rig has dual setback zones, Step 1 applies.
3. The HawkJaw may **rest** on the **rig floor 3' -5' ft. away** from the **rotary table**.

Hanging Cable Requirements

1. **5/8" diameter steel cable**.
2. Appropriate **hanging cable hardware** for **5/8"** diameter steel cable.
3. **Enough** cable **length** to **suspend** the **Hanger Eye** (HE) **20' ft. above** the **rig floor**.
4. **Enough** cable **length** to **allow** the HawkJaw to **rest** on the rig floor 3'- 5' ft. away from the rotary table with the lift cylinder completely stroked out. The lift cylinder is 13' ft. long when completely stroked out.



Hydraulic Requirements

1. **Pressure compensated pump** set to pressure compensate at **2600 psi**.
2. **Minimum** volume of **20 gpm**. **35 gpm** for **top performance**.
3. **1" minimum Pressure line**. **1 1/4" Pressure line** if the **power unit** is located **more than 100' apart** from the HawkJaw. The **hose working pressure** must be **3000 psi or greater**.
4. **1 1/4" minimum Tank line**. **500 psi minimum hose working pressure**.
5. Hawk approved **pressure side non-collapsible** on-board **3000 psi filter** (HF) (Part # 061-H25). Initial filter element supplied with the HawkJaw.
6. Hawk approved **quick disconnects (**Part # 061-H26). Initial quick disconnects supplied with the HawkJaw.
7. Hydraulic power unit **located** in a **clean, dry, ventilated area**.
8. **Enough slack** in the lines for the HawkJaw to **move** from its **rest position** to the **drill pipe connection** to the **mouse hole connection**.

WARNING

The HawkJaw is a **closed center system** which **must have** a **pressure compensated volume controlled** power unit. If the only available hydraulic power unit is **constant volume**, then the **optional hydraulic converter kit** (Part # 061-J80) is required. Running the HawkJaw with a **constant volume** hydraulic power unit may result in **bodily injury** and will cause **damage** to the **HawkJaw** and to the **hydraulic power unit**.

WARNING

The HawkJaw must receive **clean hydraulic fluid**. Running the HawkJaw without a Hawk approved pressure-side filter (Part # 061-H25) voids the warranty and severely shortens component life.

Air Requirements

1. **Clean, dry air** at **100 psi** @ a negligible volume.
2. **On board auto-dump air filter** (AF) (part# 061-A22), located on board the rear of the Hawkjaw.
3. **Enough slack** in the line for the HawkJaw to **move** from its **rest position** to the **drill pipe connection** to the **mouse hole connection**.

WARNING

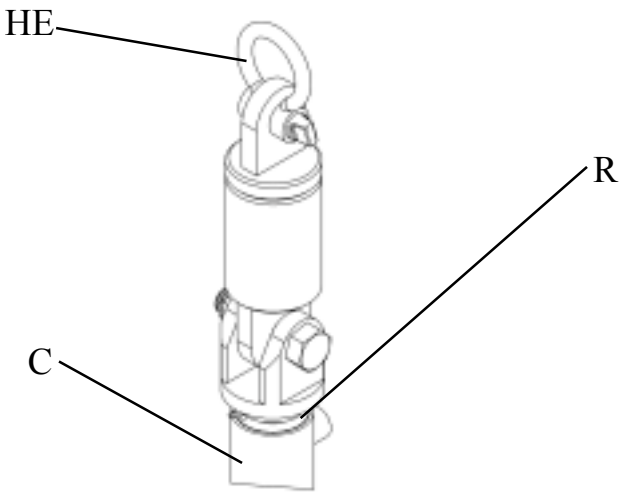
The HawkJaw must receive **clean, dry air**. Running the HawkJaw without a Hawk approved air filter (AF) voids the warranty and shortens component life.

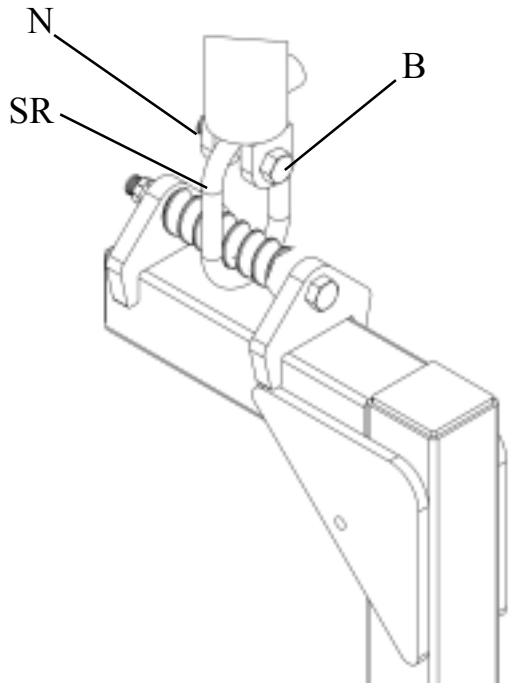
Raise/Lower Cylinder Hook - Up

1. Use the **Raise/Lower cylinder Cap** side **Bolt** (B) to **connect** the HawkJaw **Suspension Ring** (SR) to the **Raise/Lower cylinder** (C).
2. Use the Raise/Lower cylinder Cap side **Lock Nut** (N) to **secure** the Raise/Lower cylinder Cap side **Bolt** (B).
3. **Connect** the **Hanger Eye** (HE) to the **hanging cable**.
4. **Connect** the **HawkJaw Rod side** (HR) and **Cap side** (HC) hydraulic **Leader hoses** to the Raise/Lower cylinder Rod side (RR) and Cap side (RC) hoses.

NOTE

Make sure the **rod side** of the Raise/ Lower cylinder (R) **connects** to the **hanging cable**.



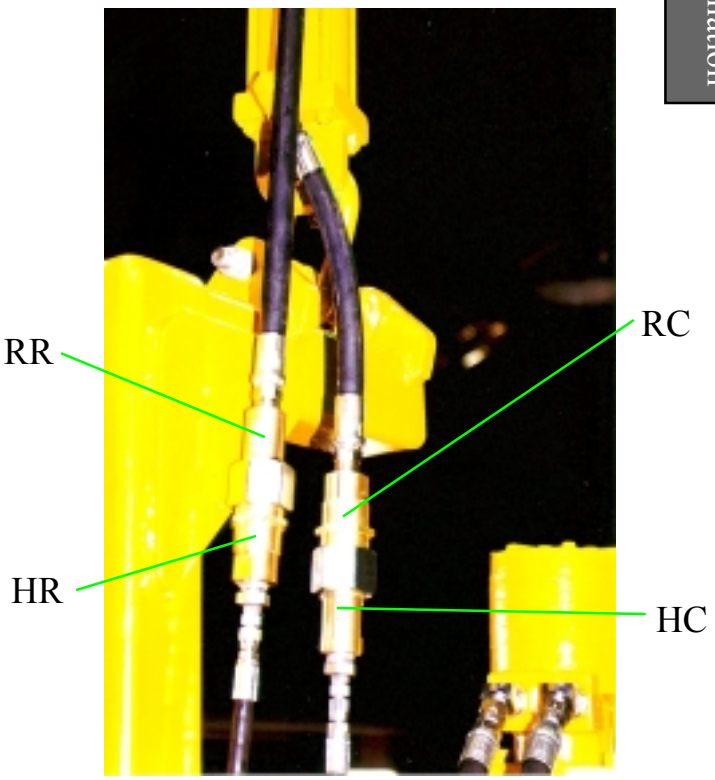


NOTE

Tightly connect the **hose fittings**. A loose hose connection causes a pressure drop in the hydraulic fluid which heats up the fluid and reduces component life.

Part Numbers

Part Name	Part #
Male Quick Disconnect (HR, RC)	061-H26M
Female Quick Disconnect (HC, RR)	061-H26F

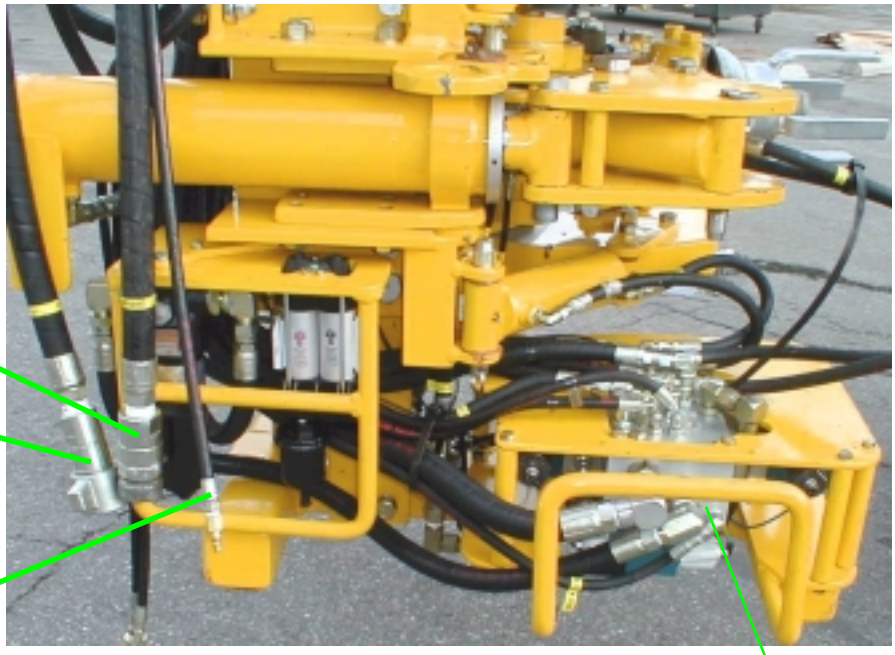


Start-up Procedure

1. **Connect** the air power source with the **Air** (A) line.
2. Make sure the hydraulic **reservoir** is **full**.
3. **Connect** the hydraulic **Pressure** (P), **Tank** (T) and **Air** (A) lines. "P" and "T" Port Designations are stamped on the Main Hydraulic Manifold (M). **Do not** hook up the hoses backward
4. **Check** for hydraulic **leaks**.

NOTE

Tightly connect the **hose fittings**. A loose connection causes a pressure drop in the hydraulic fluid which heats up the fluid and reduces component life.



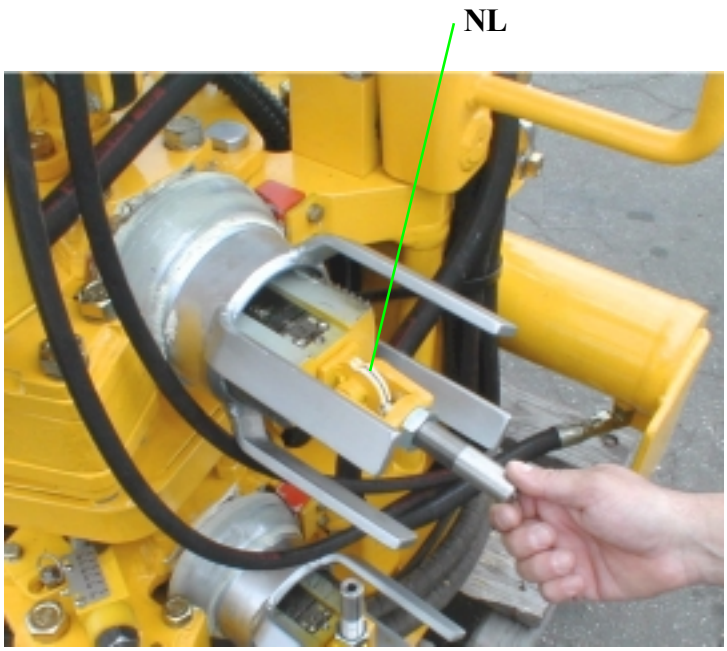
Part Numbers

Part Name	Part #
Male Quick Disconnect (P)	061-H52
Female Quick Disconnect (T)	061-H53
Male Air Quick Disc. (A)	061-A12M
Female Air Quick Disc.	061-A12F

Adjust for Make Up

Adjusting the Wrenches

1. Make sure the **nut lock** (NL) is in the **unlocked** position.

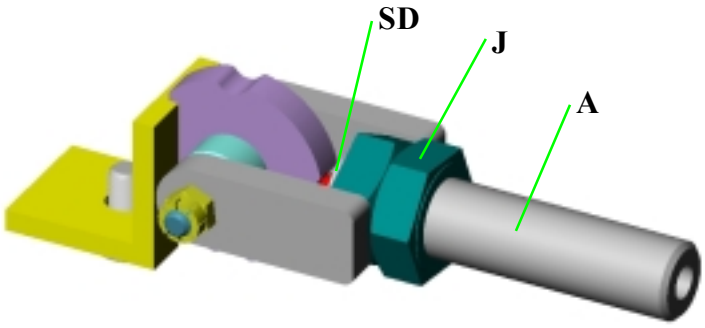


Adjusting the Nut Lock Detent Setting (If Needed)

A. **Loosen** the **jam nut** (J) to allow some space for the arm to adjust.

B. **Screw** the **arm** (A) in or out to adjust the stiffness of the **springloaded detent** (SD).

C. **Tighten** the **jam nut** (J) to secure the **arm** (A) from loosening.



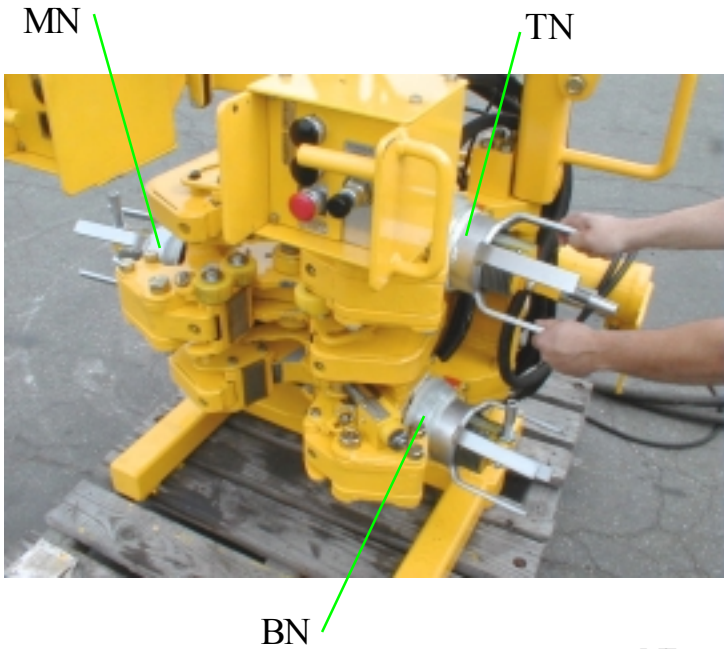
Part Number

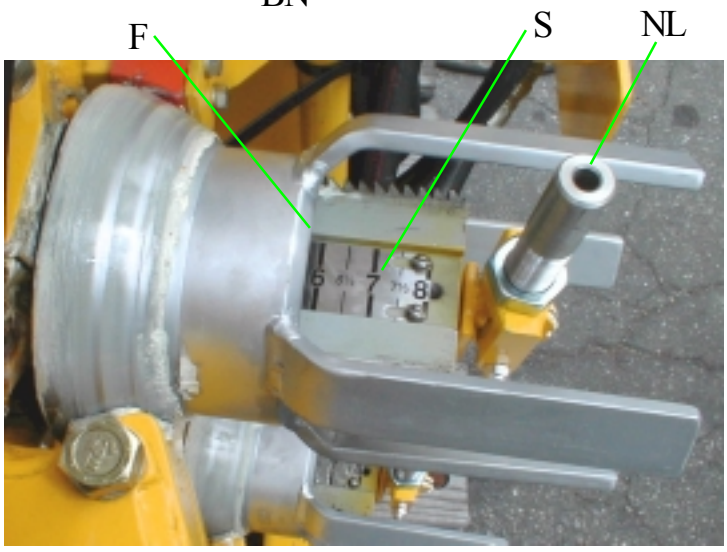
Part Name	Part #
Adjust Nut Locking System	061-30280

Continued on next page.

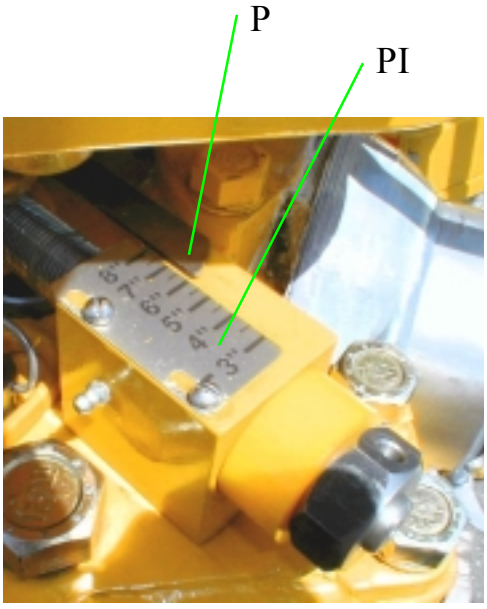
Adjust for Make Up

2. **Measure** the **tool joint** with OD calipers.
3. Use the 1 1/2" wrench to **adjust** the **Pointer** (P) on the **Pipe stop index** (PI) to the **OD** tool joint **size**.
4. For safety, **adjust** the **Bottom wrench nut** (BN) **1" larger** than the Top wrench nut (TN) and Middle wrench nut (MN).
5. **Rotate** the **Top wrench nut** (TN) and the **Middle wrench nut** (MN) to the **OD** tool joint **size**. Visually **align** the end **face** (F) of the wrench nut with the **scale** (S) on the wrench.
6. Rotate **Nut Lock** (NL) down or up to fix pipe size adjustment.





Shown set for 6 " OD tool joint



Shown set for 6" OD tool joint

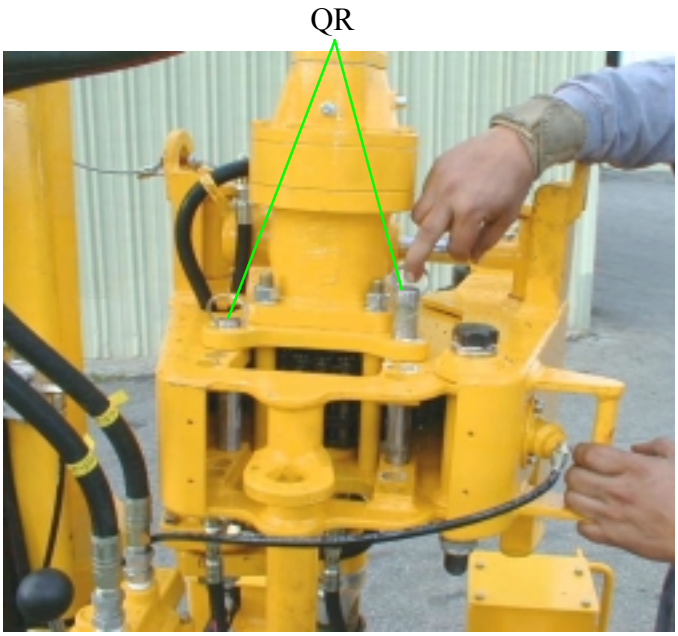
Adjust for Make Up

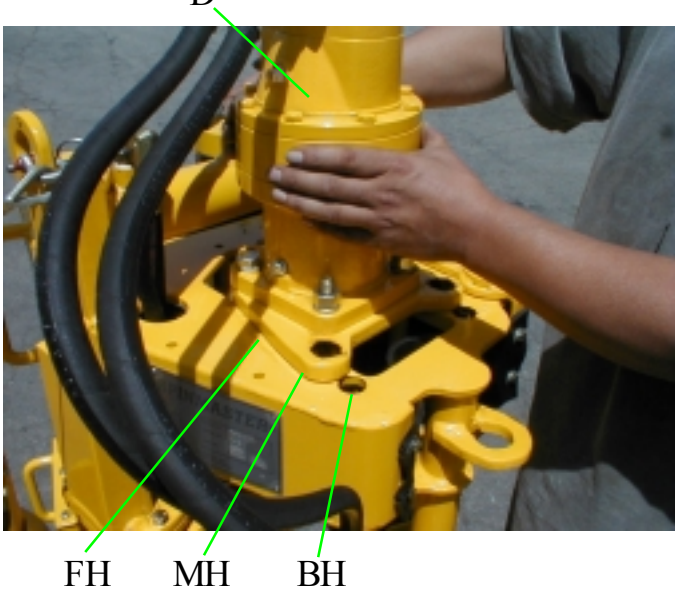
Adjusting the Spinner

1. **Measure** the drill pipe **tube** with OD calipers.
2.

Tube Size	Use
4 1/2"- 5 1/2"	Front Holes (FH)
3 1/2"- 4"	Middle Holes (MH)
2 7/8"	Rear Holes (RH)

3. **Remove** the two **quick release pins** (QR).
4. **Slide** the whole **Drive unit** (D) **forward or backward** to the appropriate holes.
5. **Replace** the **quick release pins** (QR).





6. **Shift spinner directional valve** (SDV) **fully forward** to the make position as shown.

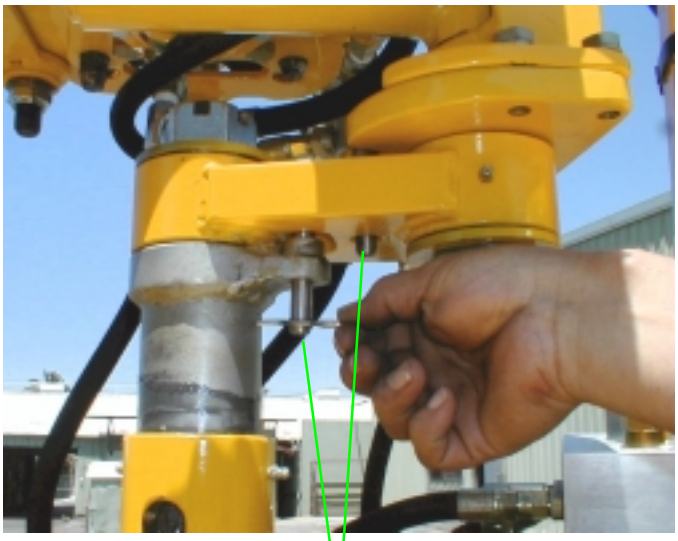
Continued on next page.

Adjust Spinner for Make Up (cont.)

7. **Use** the **rotary table** to spin drill collars **larger than 5 1/2" OD**. **Place** the **HawkJaw spinner in** the **rest position**.

Rest Position

1. **Remove** the Spinner Arm **Pins** (P).
2. **Rotate** the **Spinner back** to the Pullback position (R).
3. **Insert** the Spinner Arm **Pins** (P) with retainer clips.

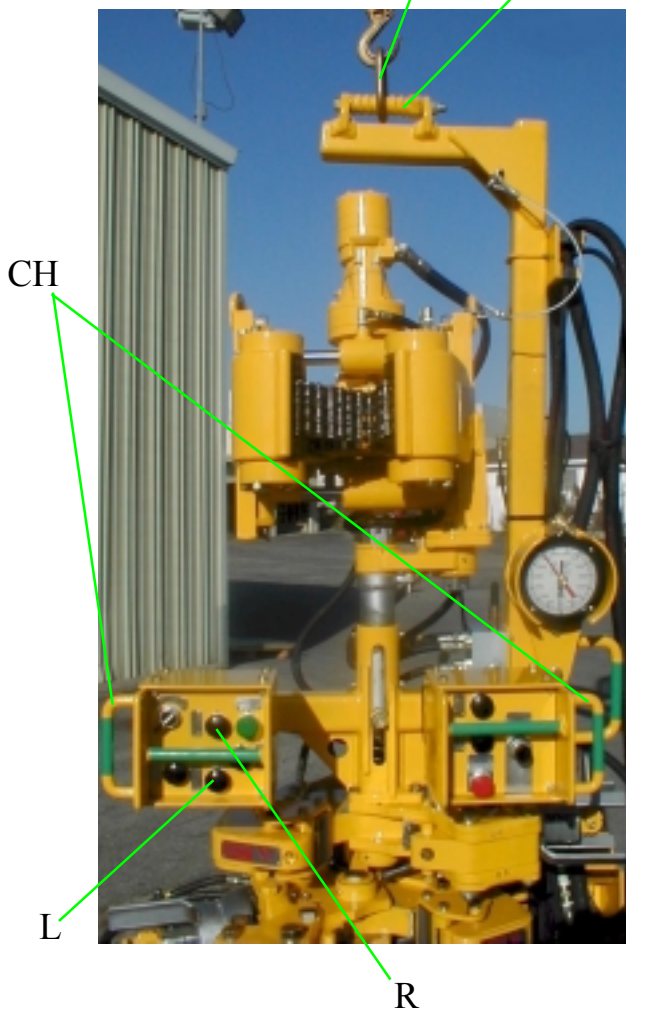


Part Numbers

Part Name	Part#
Quick Release Pin	061-30093
Retainer Clip	061-92391A056

Position for Make Up

1. Stab the drill stand.
2. **Center** the **Suspension Ring** (SR) on the Lateral tilt screw (LTS).
3. If the HawkJaw rests on the rig floor, use **Raise** (R) to raise the HawkJaw 1'- 2' ft. off the rig floor.
4. If the HawkJaw is hooked back to the derrick, unhook the HawkJaw.
5. Use the Control Handles (CH) to **pull** the **HawkJaw onto** the **drill pipe connection**.
6. Use Raise (R) and Lower (L) to **center** the Top wrench dies (TD) and the Middle wrench **dies** (MD) **between** the **shoulder** (S).
7. Keep the **Middle** wrench **dies** (MD) **away** from the **Hard banding** (HB).
8. Keep the **Top** wrench **dies** (TD) and the **Middle** wrench **dies** (MD) **away** from the **shoulder** (S).



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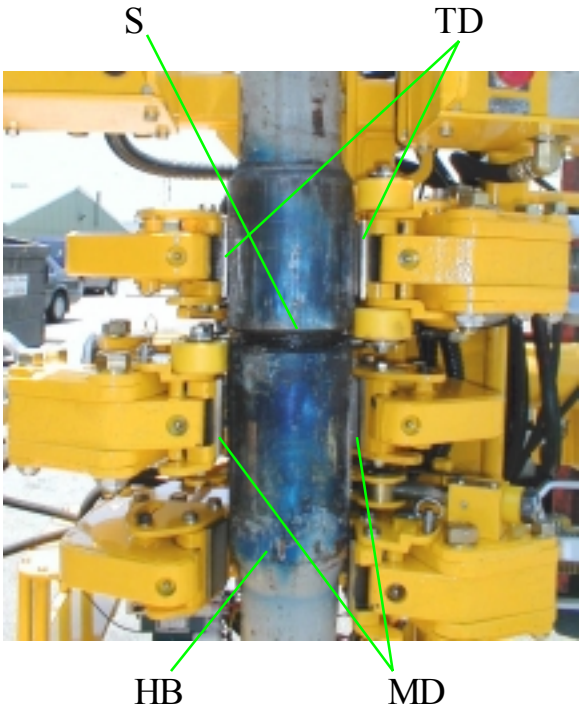
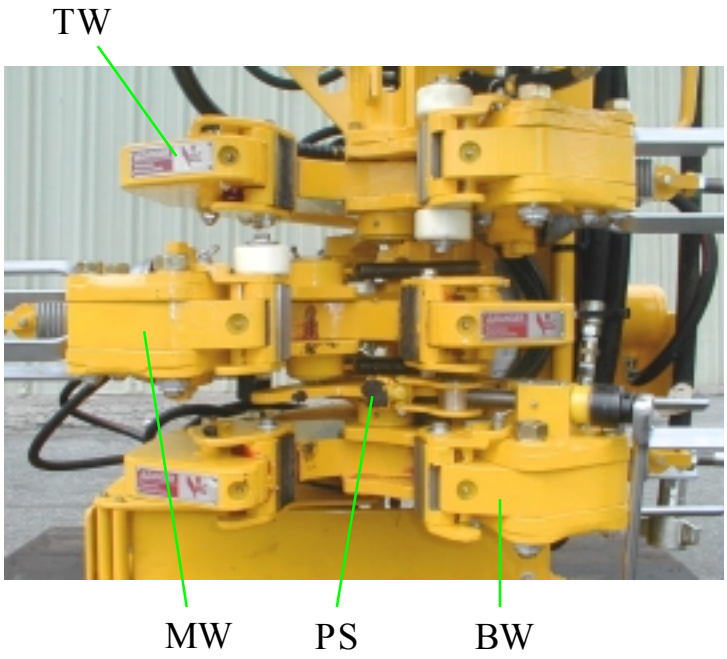


Position for Make Up (cont.)

9. Check that the HawkJaw **Top wrench** (TW), **Middle wrench** (MW) and **Bottom wrench** (BW) hang **straight** and **level** when the drill pipe is against the pipe stop.
10. If the HawkJaw **wrenches** (TW, MW, BW) hang **tilted** forward or backward, use the crescent wrench to **adjust** the **Turnbuckle** (TB).
11. If the HawkJaw **wrenches** (TW, MW, BW) hang **sloped** to the **right** or to the **left**, use the Control Handles (CH) to back the HawkJaw off the pipe. Use Lower (L) to lower the HawkJaw to the rig floor. **Repeat Step 2**.
12. Make sure the **Pipe stop** (PS) is **against** the **drill pipe connection.**



NOTE

The HawkJaw performs best when it hangs aligned with pipe.

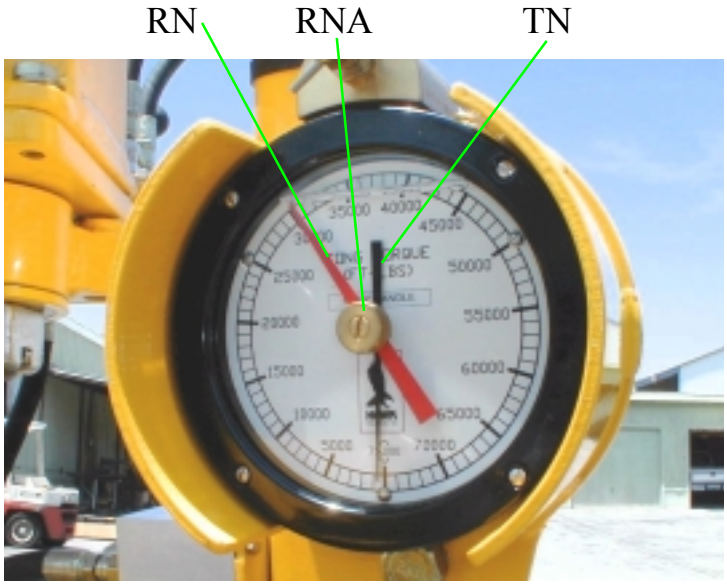
Part Numbers

Part Name	Part #
Turnbuckle (TB)	061-3022T56

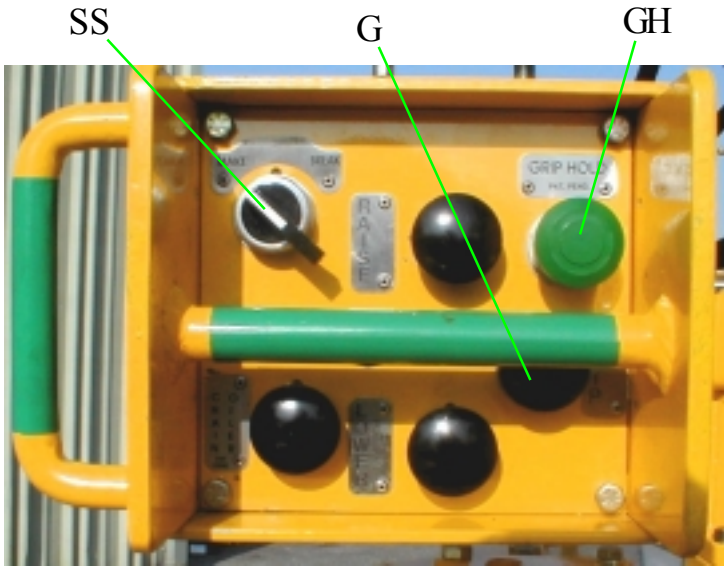
Setting Make Up Torque

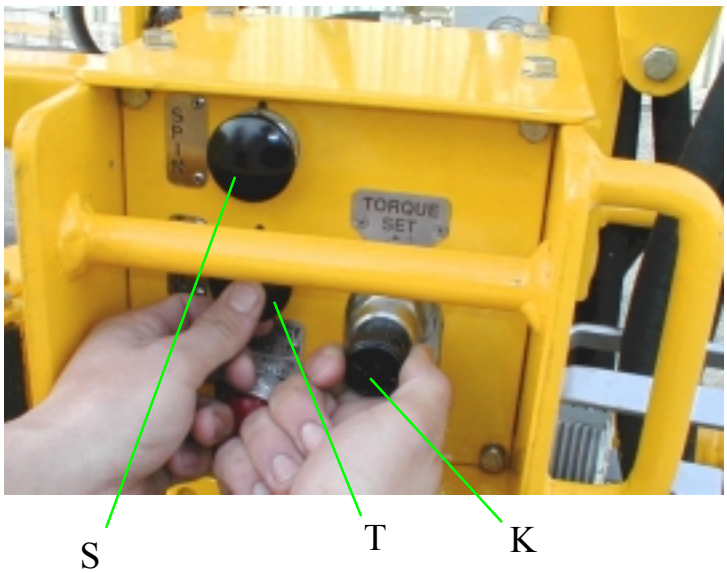
Warning
When Hawkjaw is at rest, **press in** the **red E-Stop** (E) button.

1. Follow the steps on pages 14-21.
2. Use the Red needle adjust (RNA) to rotate the **Torque gauge red needle** (RN) to the **desired torque**.
3. **Rotate** the **Torque Set knob** (K) **counter- clockwise** as far as the Torque Set knob (K) will turn.
4. **Rotate** the **Selector Switch** (SS) to the **make** position.
5. Press in the **Grip Hold** (GH) button.
6. Press and hold **Spin** (S) until the stand rotates down to the shoulder.
7. Release **Spin** (S).
8. **Push in** and **hold** the wrench **Grip** (G).
9. Press and hold **Torque** (T). While holding down Torque (T), **rotate** the **Torque Set knob** (K) **clockwise**.
10. When the **Torque gauge needle** (TN) reaches the **desired torque**, **stop** rotating the Torque Set knob (K).
11. Release Torque (T). Immediately **release** the wrench **Grip** (G).
12. Pull out the **Grip Hold** (GH) button.
13. The **Hawkjaw torque is now set** and **can now be removed** from the **pipe**.



Shown set for 30,000 ft. lbs.





Make Up

1. Follow the steps on pages 14-21.
2. Press in the **Grip Hold** (GH) button.
3. Press and hold **Spin** (S) until the stand rotates down to the shoulder.
4. Release **Spin** (S).
5. **Push in** and **hold** the wrench **Grip** (G).
6. **Push** and **hold** down **Torque** (T).
7. Watch the Torque gauge needle (TN).
8. When the **Torque gauge needle** rises above and settles at the **desired torque** (this **rising above** is a normal hydraulic adjustment), release **Torque** (T). Immediately release **Torque** (T) button and the wrench **Grip** (G) button.

8a. **Note:** If the desired torque is not achieved, **repeat steps 5-8**.

9. Pull out the **Grip Hold** (GH) button.
10. The **Hawkjaw can now be removed** from the **pipe**.

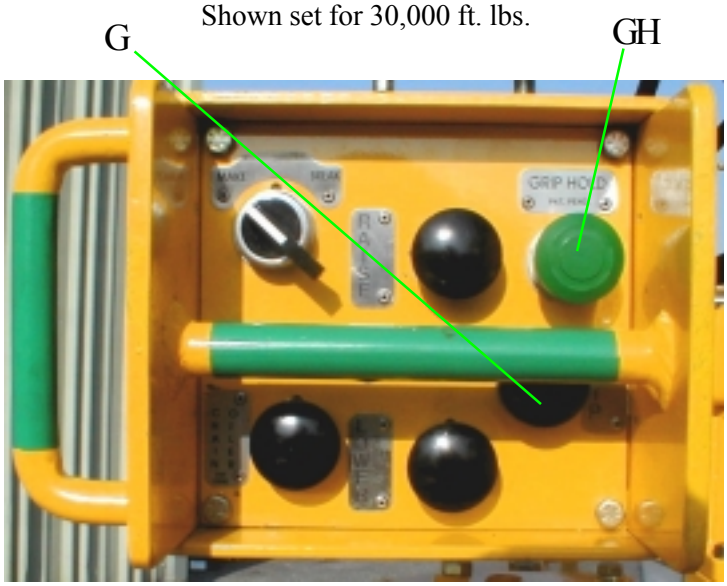
WARNING

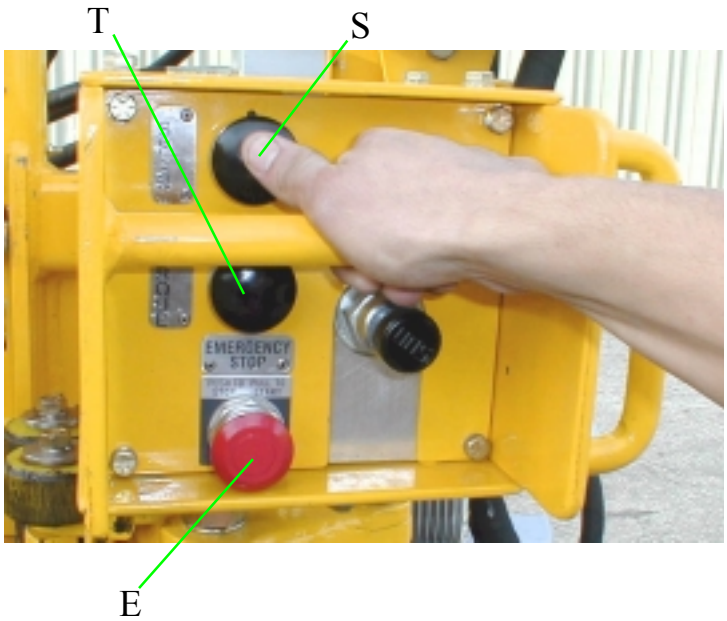
Make sure the Torque gauge needle settles at the desired torque.

LOW TORQUE WARNING SYSTEM

If the **Torque cylinder strokes out** before the **desired torque** is reached, the **Torque gauge needle** (TN) will **fall off** almost to **zero**. If this happens, **release Torque** (T). Immediately **release** the wrench **Grip** (G) button. **Wait for** the **Torque cylinder** to **reset**. **Push** and **hold** the wrench **Grip** (G) button. **Repeat steps 5-8**.

Shown set for 30,000 ft. lbs.

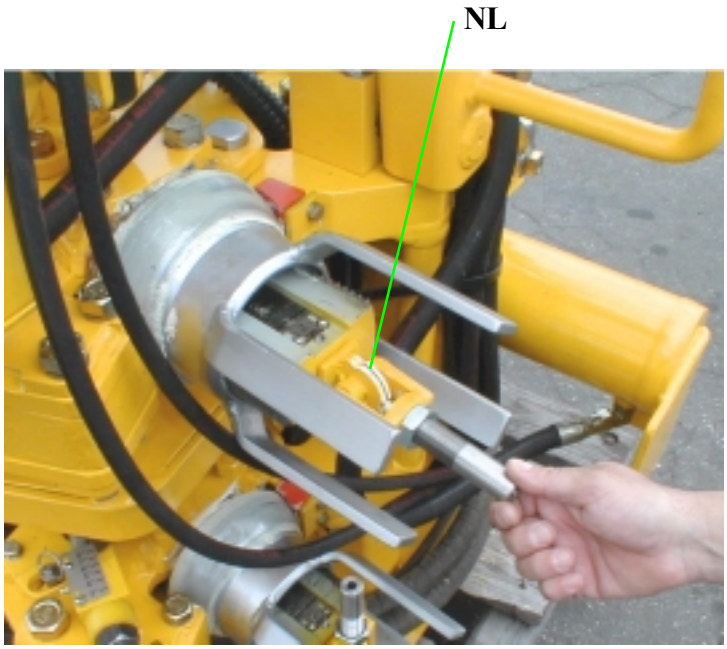




Adjust for Break Out

Adjusting the Wrenches

1. Make sure the **nut lock** (NL) is in the **unlocked** position.



Adjusting the Nut Lock Detent Setting (If Needed)

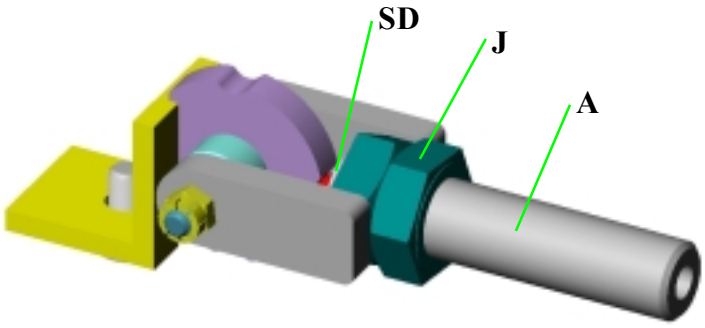
A. **Loosen** the **jam nut** (J) to allow some space for the arm to adjust.

B. **Screw** the **arm** (A) in or out to adjust the stiffness of the **springloaded detent** (SD).

C. **Tighten** the **jam nut** (J) to secure the **arm** (A) from loosening.

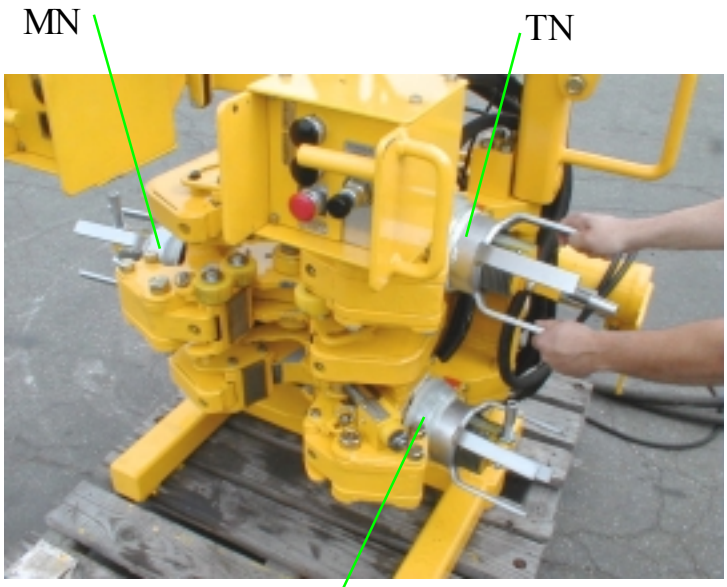
Part Number

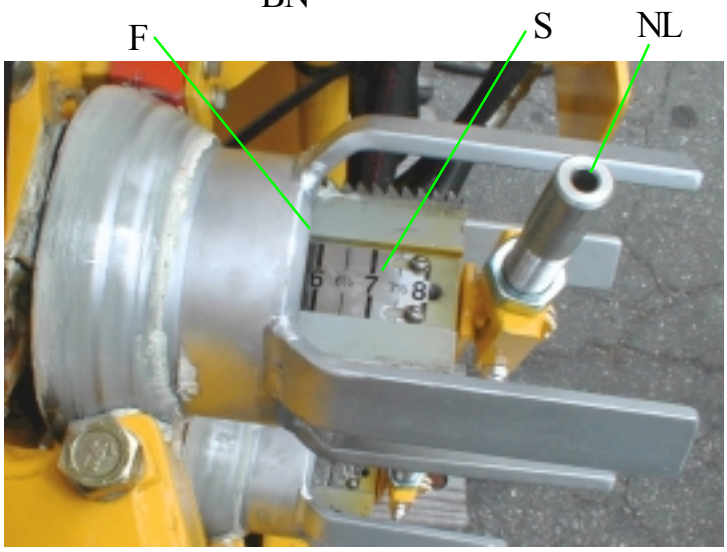
Part Name	Part #
Adjust Nut Locking System	061-30280



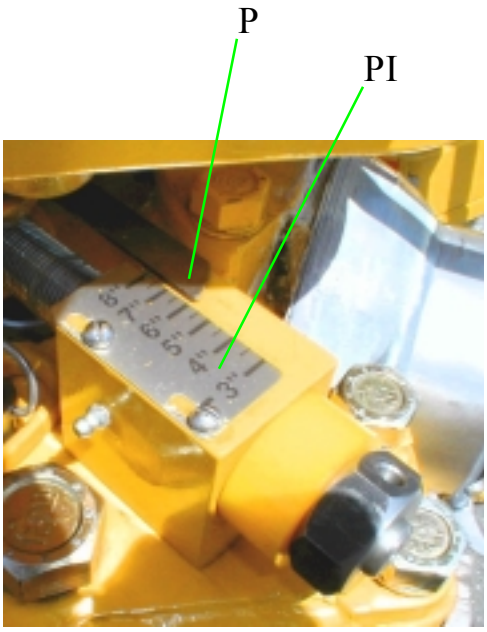
Adjust for Break Out

2. **Measure** the **tool joint** with OD calipers.
3. Use the 1 1/2" wrench to **adjust** the **Pointer** (P) on the **Pipe stop index** (PI) to the **OD** tool joint **size**.
4. For safety, **adjust** the **Top wrench nut** (TN) **1" larger** than the Bottom wrench nut (BN) and Middle wrench nut (MN).
5. **Rotate** the **Bottom wrench nut** (BN) and the **Middle wrench nut** (MN) to the **OD** tool joint **size**. Visually **align** the end **face** (F) of the wrench nut with the **scale** (S) on the wrench.
6. Rotate **Nut Lock** (NL) down or up to fix pipe size adjustment.





Shown set for 6 " OD tool joint



Shown set for 6" OD tool joint

Adjust for Break Out

Adjusting the Spinner

1. **Measure** the drill pipe **tube** with OD calipers.
2. Tube Size — Use

Tube Size	Use
4 1/2"- 5 1/2"	Front Holes (FH)
3 1/2"- 4"	Middle Holes (MH)
2 7/8"	Rear Holes (RH)

3. **Remove** the two **quick release pins** (QR).
4. **Slide** the whole **Drive unit** (D) **forward or backward** to the appropriate holes.
5. **Replace** the **quick release pins** (QR).

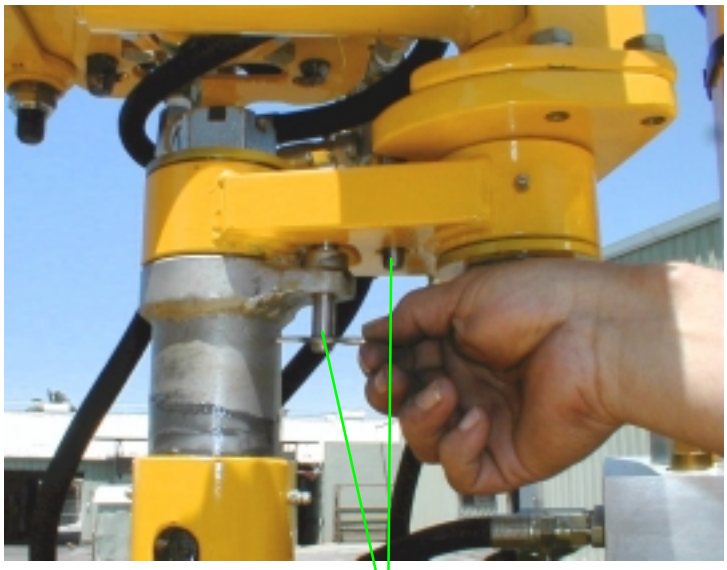
6. **Shift spinner directional valve** (SDV) **fully back** to the make position as shown.

Adjust Spinner for Break Out (cont.)

7. **Use** the **rotary table** to spin drill pipe **larger than 5 1/2" OD**. **Place** the **HawkJaw spinner in** the **rest position**.

Rest Position

1. **Remove** the Spinner Arm **Pins** (P).
2. **Rotate** the **Spinner back** to the Pullback position (R).
3. **Insert** the Spinner Arm **Pins** (P) with retainer clips.

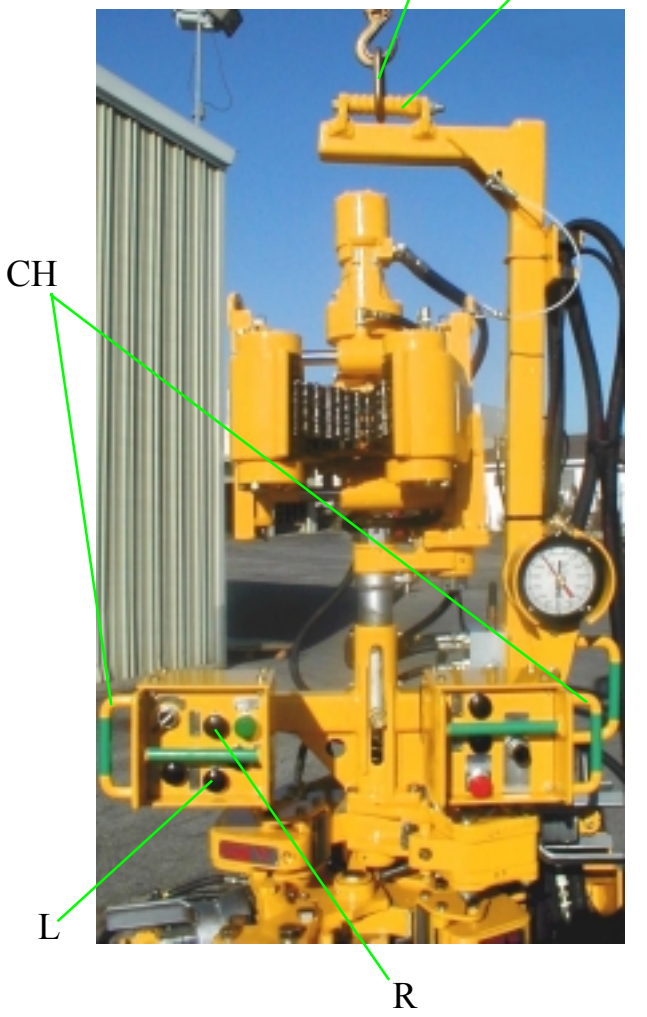


Part Numbers

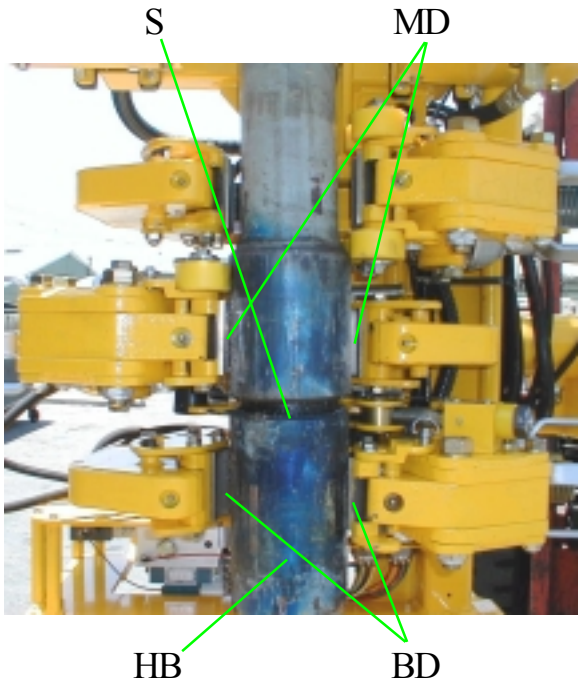
Part Name	Part#
Quick Release Pin	061-20093
Retainer Clip	061-92391A056

Position for Break Out

1. Stab the drill stand.
2. **Center** the **Suspension Ring** (SR) on the Lateral tilt screw (LTS).
3. If the HawkJaw rests on the rig floor, use **Raise** (R) to raise the HawkJaw 1'- 2' ft. off the rig floor.
4. If the HawkJaw is hooked back to the derrick, unhook the HawkJaw.
5. Use the Control Handles (CH) to **pull** the **HawkJaw onto** the **drill pipe connection**.
6. Use Raise (R) and Lower (L) to **center** the Middle wrench dies (MD) and the Bottom wrench **dies** (BD) **between** the **shoulder** (S).
7. Keep the **Bottom** wrench **dies** (BD) **away** from the **Hard banding** (HB).
8. Keep the **Middle** wrench **dies** (MD) and the **Bottom** wrench **dies** (BD) **away** from the **shoulder** (S).

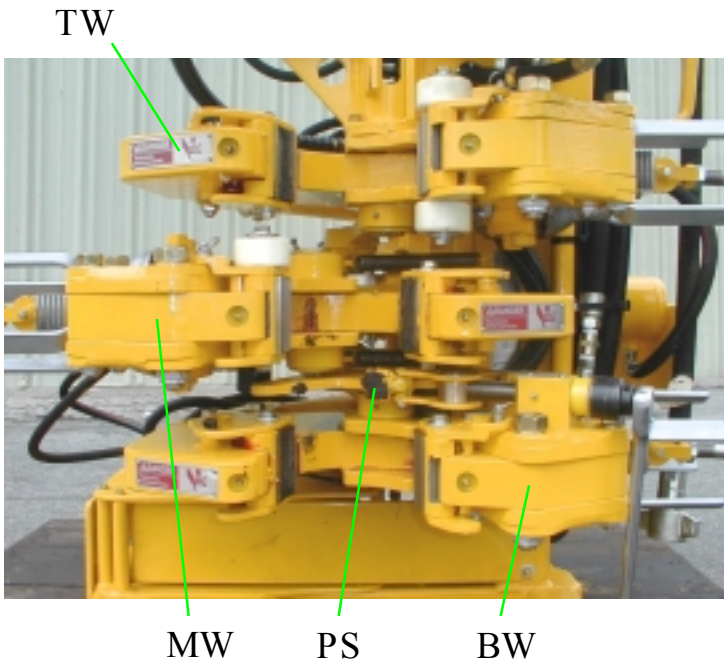


Continued on next page.



Position for Break Out (cont.)

9. Check that the HawkJaw **Top wrench** (TW), **Middle wrench** (MW) and **Bottom wrench** (BW) hang **straight** and **level** when the drill pipe is against the pipe stop.
10. If the HawkJaw **wrenches** (TW, MW, BW) hang **tilted** forward or backward, use the crescent wrench to **adjust** the **Turnbuckle** (TB).
11. If the HawkJaw **wrenches** (TW, MW, BW) hang **sloped** to the **right** or to the **left**, use the Control Handles (CH) to back the HawkJaw off the pipe. Use Lower (L) to lower the HawkJaw to the rig floor. **Repeat Step 2**.
12. Make sure the **Pipe stop** (PS) is **against** the **drill pipe connection.**



NOTE

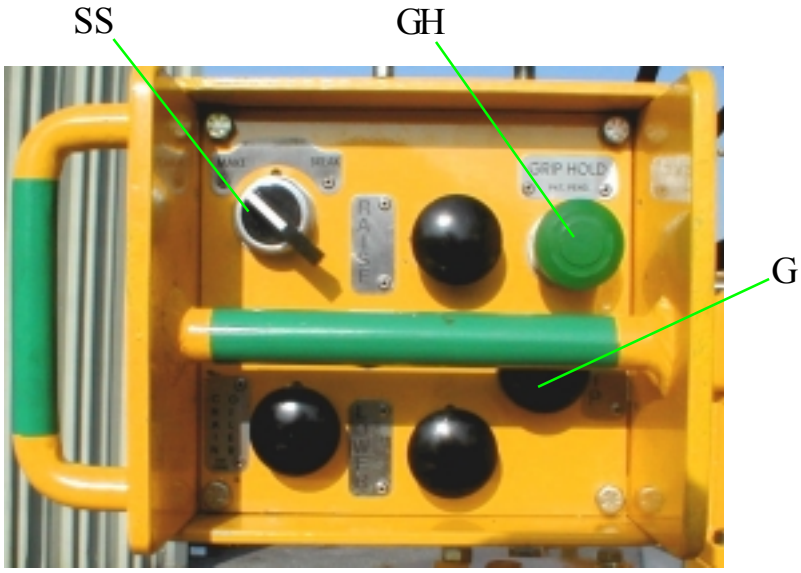
The HawkJaw performs best when it hangs aligned with pipe.

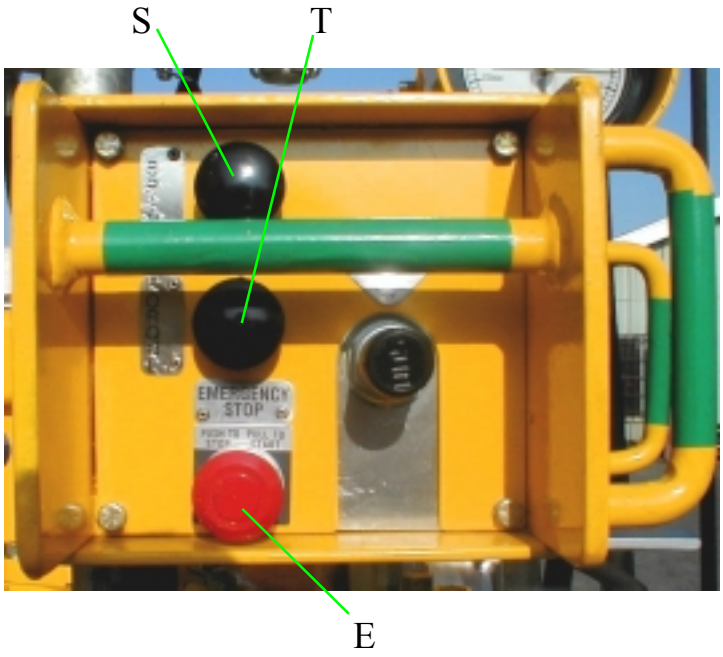
Part Numbers

Part Name	Part #
Turnbuckle (TB)	061-3022T56

Break Out

1. Follow the steps on pages 14, 24-30.
2. **Rotate** the **Selector Switch** (SS) clockwise to the **break** position.
3. Push in the **Grip Hold** (GH) button.
4. **Push** and **hold** in the wrench **Grip** (G).
5. Push and hold down **Torque** (T).
6. **When break out occurs**, **release Torque** (T). Immediately **release** the wrench **Grip** (G). See note below.
7. Press and hold down **Spin** (S) until the stand pops out of the connection. **Release Spin** (S). **If** the **stand will not spin**, **release Spin** (S). Repeat Steps 4-6.
8. Pull out the **Grip Hold** (GH) button.
9. You are now able to **remove** the **Hawkjaw** from the pipe.





Warning

When Hawkjaw is at rest, **press in** the **red E-Stop** (E) button.

Note:

If connection will not break, increase torque adjustment (TA) as necessary.

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Low Torque Warning Test

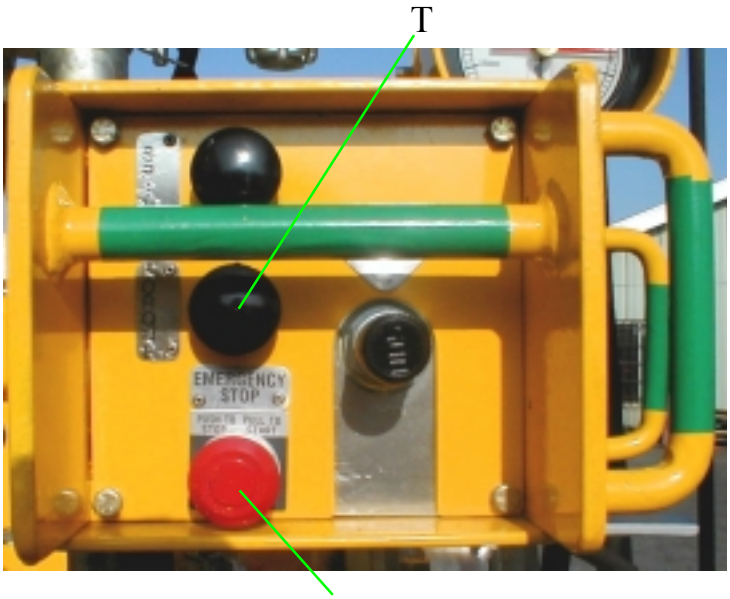
CHECK

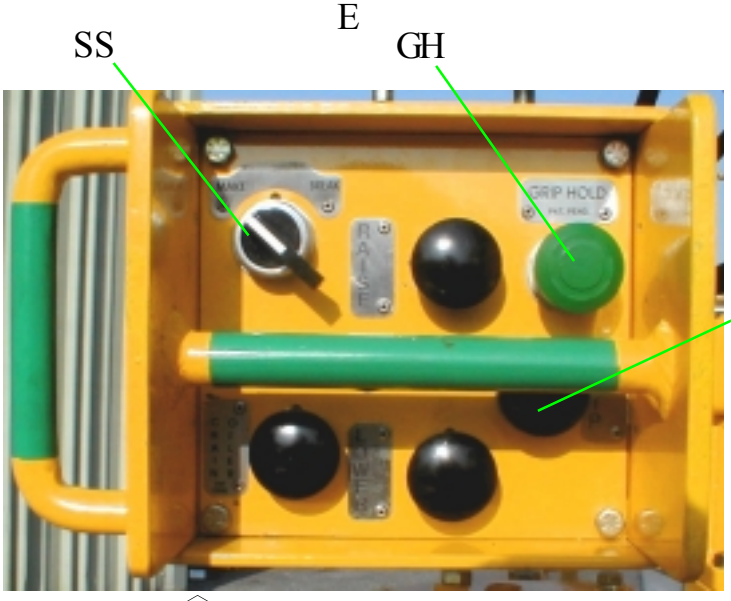
If the **Torque cylinder strokes out** before the **desired torque** is reached, the **Torque gauge needle** (TN) will **fall off** to approximately a **8000 Ft.-Lb**. reading. If this happens, **release Torque** (T). Immediately **release Grip** (G). **Wait for** the **Torque cylinder** to **reset**.

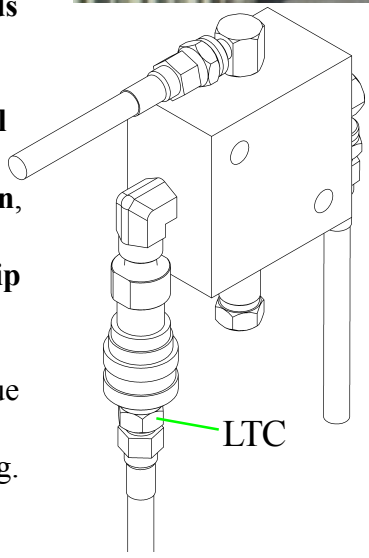
LOW TORQUE WARNING SYSTEM CHECK

Test#1: **Hawk strongly recommends testing the Low Torque Warning System on every trip**. If this test procedure is not performed, the **drill string could be over torqued**. **Disconnect** the Low torque warning **test connector** (LTC) located as shown. **Torque** the first **connection**. **Note** the torque gage **needle position**; keep the Hawkjaw positioned on the **same connection**. Now **re-connect the Low Torque Warning Connector**. **Re-torque** the **connection**. The torque gage **should indicate** the **same reading**. If it does not, see Trouble Shooting page 96.

Test#2: **Hawk strongly recommends testing the Low Torque Warning System on every trip**. If this test procedure is not performed, the **drill string could be under torqued**. **When breaking** the **first connection**, push in the **Grip Hold** (GH) button, hold down both **Torque** (T) and **Grip** (G) **until** the **Torque Cylinder fully strokes out**. When the Torque Cylinder fully strokes out, the Torque **Gauge Needle** will **fall off** to approximately an **8000 Ft.- Lb** reading. If this does not occur, see Trouble-shooting p. 96.







NOTE

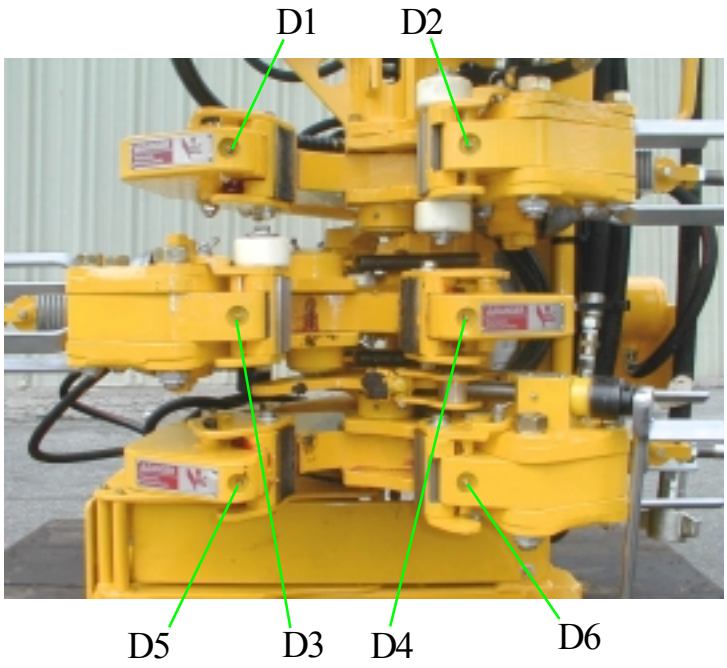
For safety, push in the "E" stop when the HawkJaw is at rest.

WARNING

Do not make up pipe with the low torque warning test connector dis-connected. This may result in under torqued pipe in the hole.

Wrench Maintenance

Grease Once per Trip



Initial Steps

1. Make sure the HawkJaw is off the drill pipe connection and in the **rest position** on the derrick.
2. **Shut down** the **Hydraulic power** unit.
3. **Press**, **push**, and **pull** all **control buttons repeatedly** to bleed hydraulic pressure.
4. **Disconnect** the **Air** power supply.
5. **Press**, **push**, and **pull** all **control buttons repeatedly** to bleed air pressure.
6. **Assume** that there is still a **load** on every actuator. Proceed with caution.

Die Pivot Blocks

1. **Pump grease fittings** D1-D6.

NOTE

Consistent lubrication of the wrenches increases performance and component life.

Wrench Maintenance

Grease Once per Week

Wrench Hook

1. **Surface grease** the **hook thread** (T) on the top wrench, middle wrench, and bottom wrench.
2. **Rotate** the **wrench nut** (N) on the top wrench, middle wrench, and bottom wrench to spread grease on the full thread area.

Wrench Nut

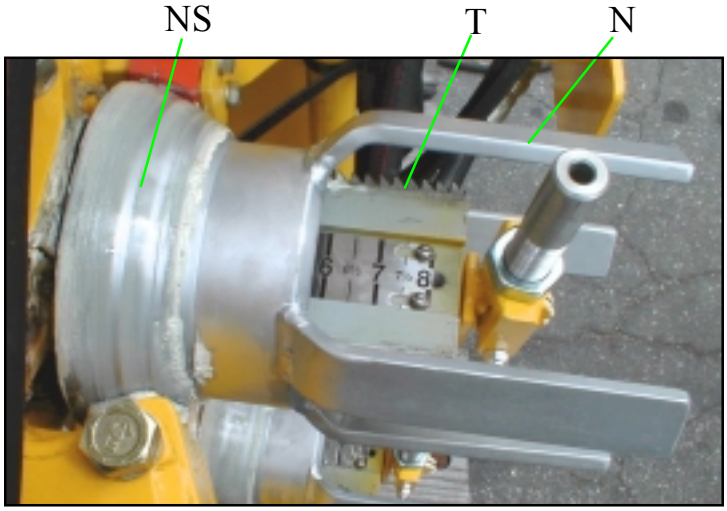
1. **Surface grease** the **wrench nut surface** (NS) on the top wrench, middle wrench, and bottom wrench.

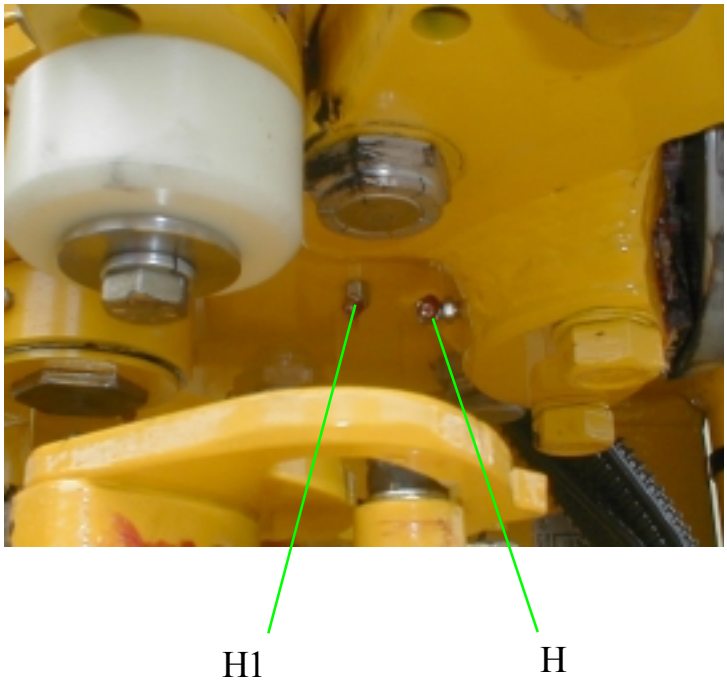
Hook Pivot Bearing Cap

1. **Pump** the Hook pivot bearing cap **grease fitting** (H) on the top and bottom of each wrench.

Hook Surfaces

1. **Pump** the hook surface **grease fittings** (H1) on the bottom of each wrench





Part Numbers

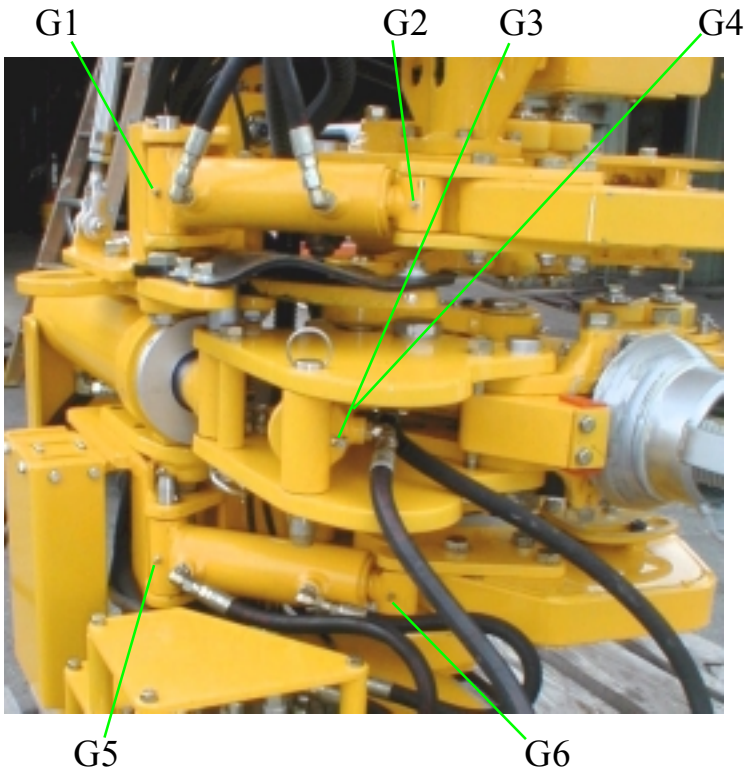
Part Name	Part#
Straight Grease Fitting	061-1103K1
90° Grease Fitting	061-1103K3
45° Grease Fitting	061-1103K2

NOTE

Consistent lubrication of the wrenches increases performance and component life.

Wrench Maintenance

Grease Once per Week



Initial Steps

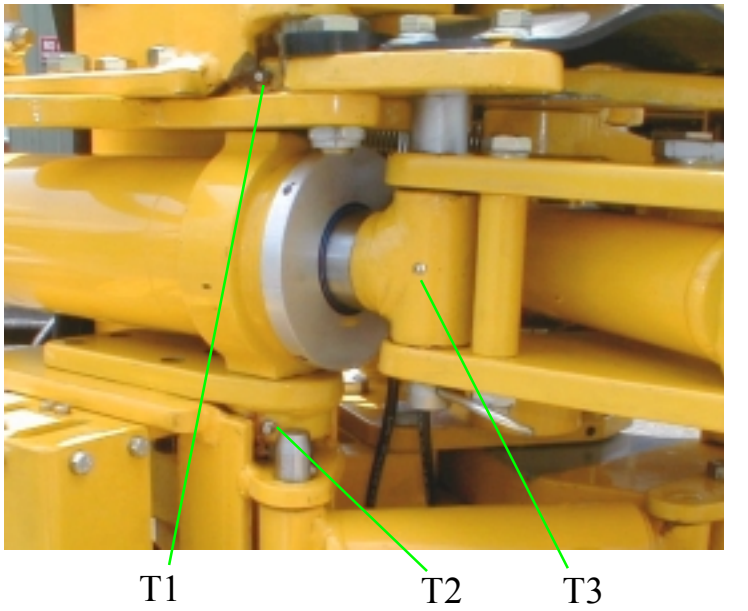
1. Make sure the HawkJaw is off the drill pipe connection and in the **rest position** on the derrick.
2. **Shut down** the **Hydraulic power** unit.
3. **Press**, **push**, and **pull** all **control buttons repeatedly** to bleed hydraulic pressure.
4. **Press** the **E-Stop** button on the **right control handle**.
5. **Press** the **E-Stop** button on the **right control handle**.
6. **Assume** that there is still a **load** on every actuator. Proceed with caution.

Grip Cylinder Pivot Points

1. **Pump grease fittings** G1-G6.

Torque Cylinder Pivot Points

1. **Pump grease fittings** T1-T3.



NOTE

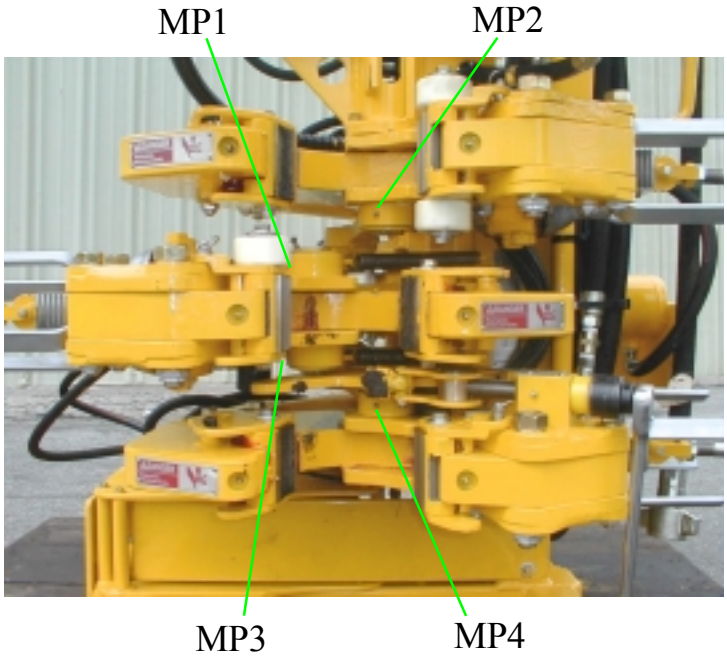
Consistent lubrication of the cylinder pivot points increases performance and component life.

Wrench Maintenance

Grease Once per Month

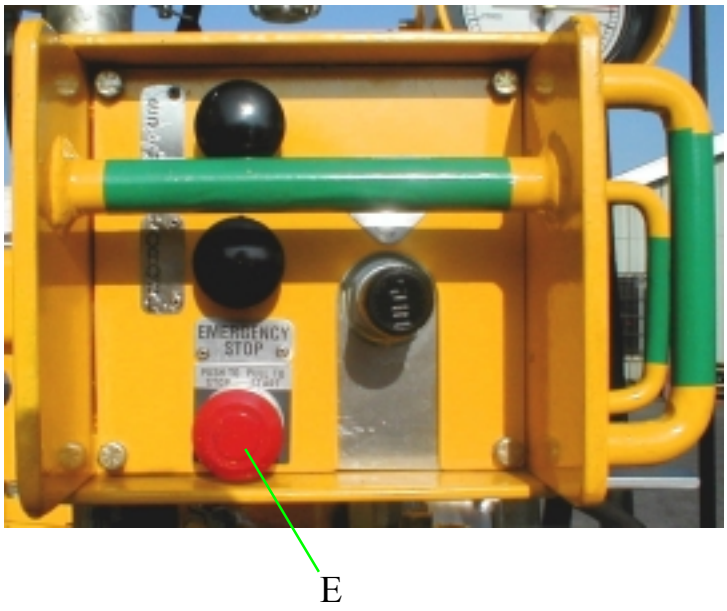
Tools Required

Grease gun



Initial Steps

1. Make sure the HawkJaw is off the drill pipe connection and in the **rest position** on the derrick.
2. **Shut down** the **Hydraulic power** unit.
3. **Press**, **push**, and **pull** all **control buttons repeatedly** to bleed hydraulic pressure.
4. **Press** the **E-Stop** (E) button on the **right control handle**.
5. **Disconnect** the **Air power** supply.
6. **Assume** that there is still a **load** on every actuator. Proceed with caution.



Mounting Arm Pivot Points

1. **Pump grease fittings** MP1-MP4.

Part Numbers

Part Name	Part #
Straight Grease Fitting	061-1103K1

NOTE

Consistent lubrication of the mounting arm pivot points increases performance and component life.

Hydraulic Filter Maintenance

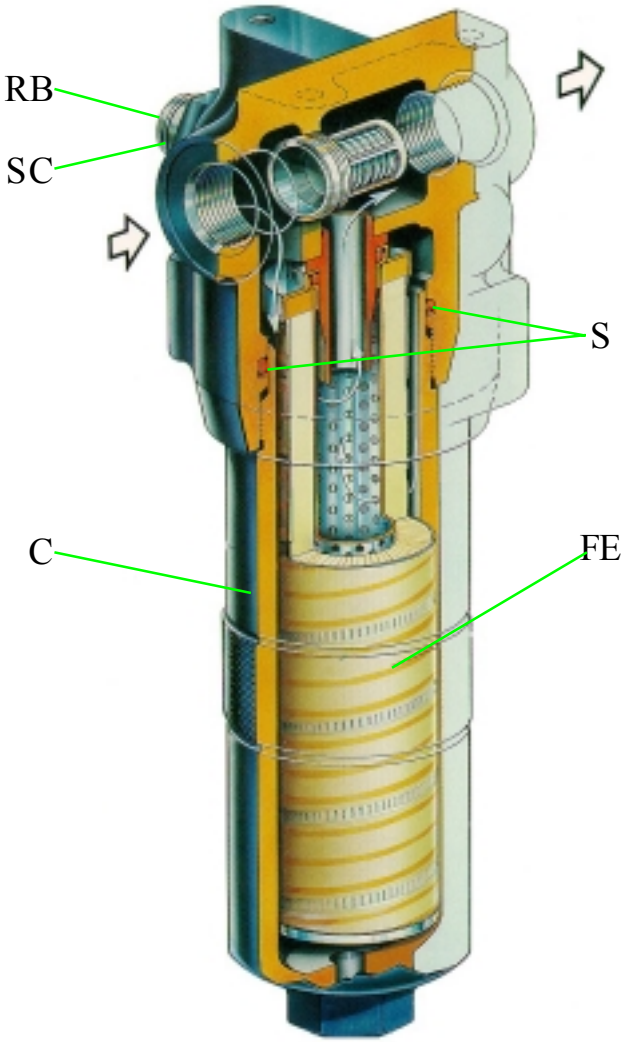
Change Every 2 Months

Initial Steps

1. Depress the Red button (RB) located under the See-through rubber weather cap (SC).
2. Operate the HawkJaw.
3. If the Red button pops up, proceed with Step 4.
4. Make sure the HawkJaw is off the drill pipe connection and in the **rest position** on the derrick.
5. **Shut down** the **Hydraulic power** unit.
6. **Press**, **push**, and **pull** all **control buttons repeatedly** to bleed hydraulic pressure.
7. **Press** the **E-Stop** (E) button on the **right control handle**.
8. **Disconnect** the **Air** power supply.
9. **Assume** that there is still **pressure** in the **Pressure Line**. Proceed with caution.

Hydraulic Filter

1. **Remove** the **Canister** (C).
2. **Remove** the Filter **Element** (FE).
3. **Insert** the new Filter **Element**.
4. **Replace** the Filter **Canister** (C).



Part Numbers

Part Name	Part #
Filter	061-H25
Filter Element (FE)	061-H25A
Filter Cannister/Body (C)	061-H25B
Weather Cap (RB)	061-H25C
Filter Seal Kit (S)	061-H25SK

WARNING

Running the HawkJaw without a Hawk approved pressure-side filter (Part # 061-H25) voids the warranty and severely shortens component life.

NOTE

If the Canister (C) leaks, change the "O" ring and back-up (S).

Air Filter Maintenance

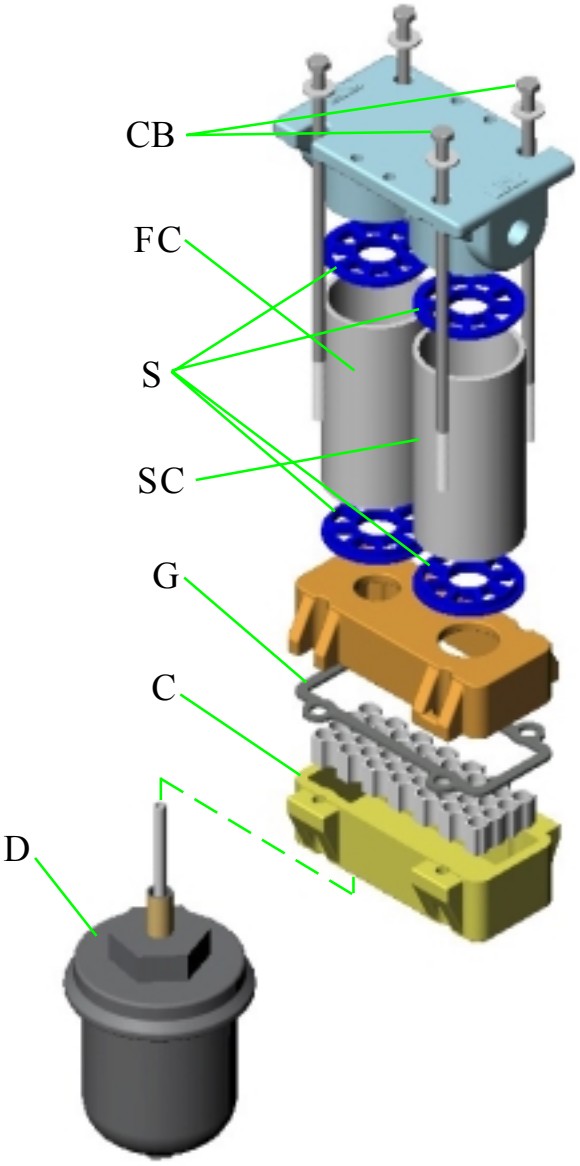
Change Every 6 Months

Initial Steps

1. **Disconnect** the **Air power** supply.
2. **Bleed** Air **Pressure**.

Air Filter

1. **Remove** the two right **Corner bolts** (CB).
2. **Slide out** the **Second stage** filter **cartridge** (SC) and Star spacers (S).
3. **Slide out** the **First stage** filter **cartridge** (FC) and Star spacers (S).
4. **Slide in** the **new** First stage Filter **cartridge** and Star spacers (S).
5. **Slide in** the **new** Second stage filter **cartridge** and Star spacers (S).
6. **Replace** the two right **Corner Bolts** (CB).



WARNING

Running the HawkJaw without a Hawk approved air filter (Part # 061-J29 & 061-A22) voids the warranty and shortens component life.

In-Line Filter Part Numbers

Part Name	Part #
In-line Air Filter (optional)	061-J29
Float Drain (D)	061-J29A
Filter Cartridge Kit (FC&SC)	061-J29B/C
Gasket (G)	061-J29D
Base Core (C)	061-J29E
Corner Bolt Kit (CB)	061-J29F

On-Board Filter Part Numbers

Part Name	Part #
On-board Air Filter	061-A22
Float Drain (D)	061-A22A
Filter Cartridge Kit (FC&SC)	061-A22B/C
Gasket (G)	061-A22D
Base Core (C)	061-A22E
Corner Bolt Kit (CB)	061-A22F

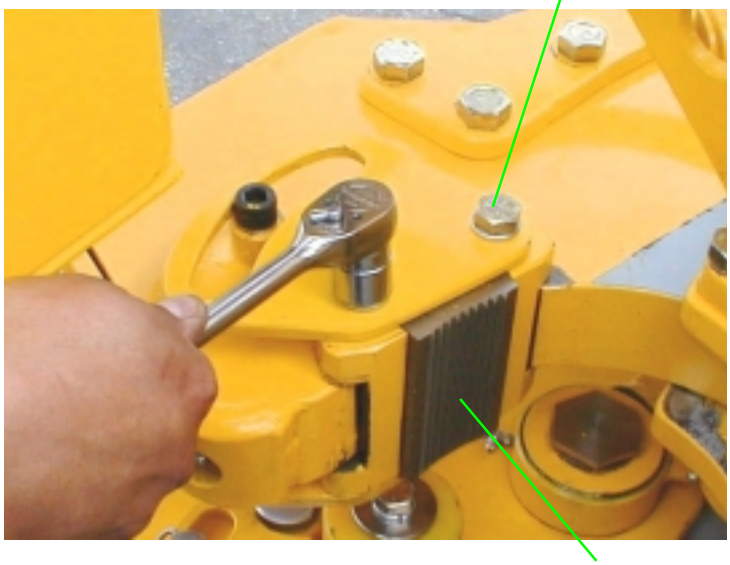
Changing the Hook Dies

Initial Steps

1. Make sure the HawkJaw is off the drill pipe connection and in the **rest position** on the derrick.
2. **Shut down** the **Hydraulic power** unit.
3. **Press**, **push**, and **pull** all **control buttons repeatedly** to bleed hydraulic pressure.
4. **Press** the **E-Stop** (E) button on the **right control handle**.
5. **Disconnect** the **Air** power supply.
6. **Assume** that there is still a **load** on every actuator. Proceed with caution.

Hook Dies

1. Use the 3/4" wrench to **remove** the **Die Holder Bolts** (B).
2. **Slide out** the **worn Die** (D).
3. Make sure the **back** and **sides** of the **new Die** are **clean**.
4. **Grease** the **back** of the new Die.
5. **Insert** the **new Die** into the Die Holder (DH) with the **teeth** of the Die **facing out**.
6. Use the 3/4" wrench to **replace** the **Die Holder Bolts** (B) and Lock Washers.



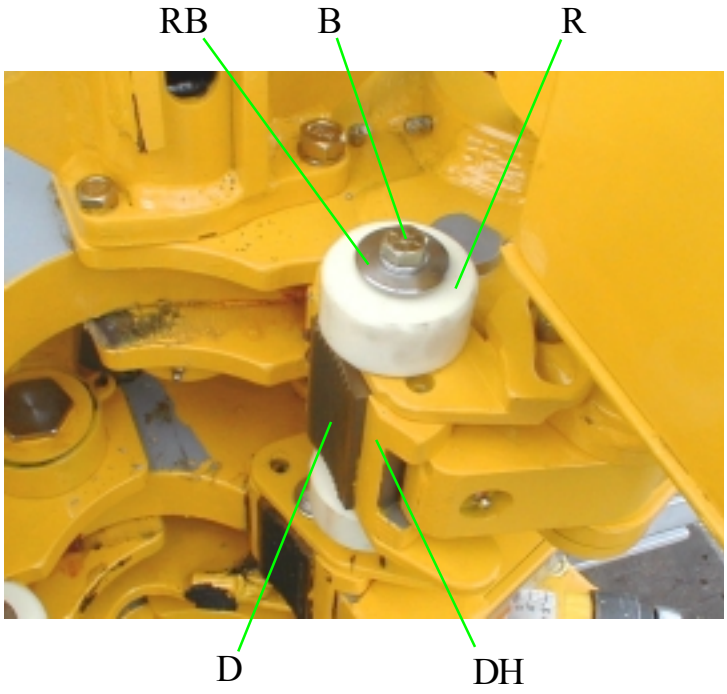
Part Numbers

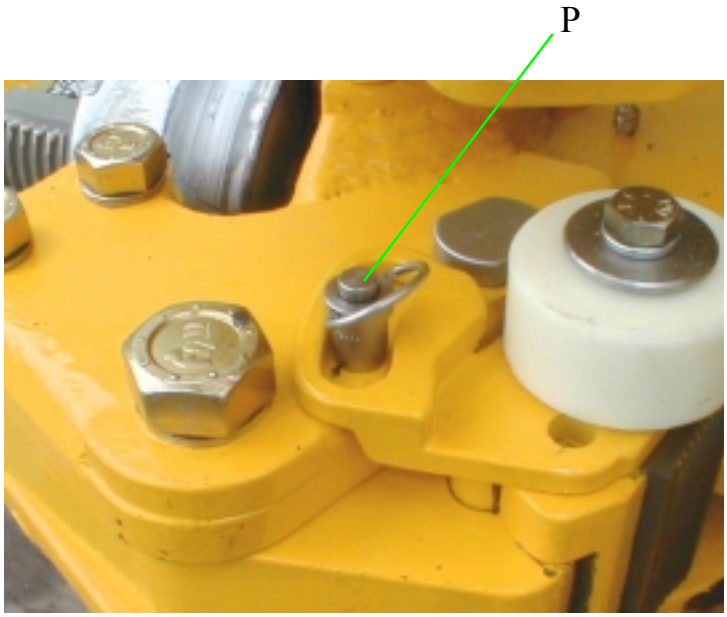
Part Name	Part #
Die (D)	061-20194
Die Holder Bolt (B)	999-806246
Die Holder Bolt Washers	999-810703
Die Holder (DH)	061-30031

Changing the Heel Dies

Initial Steps

1. Make sure the HawkJaw is off the drill pipe connection and in the **rest position** on the derrick.
2. **Shut down** the **Hydraulic power** unit.
3. **Press**, **push**, and **pull** all **control buttons repeatedly** to bleed hydraulic pressure.
4. **Press** the **E-Stop** (E) button on the **right control handle**.
5. **Disconnect** the **Air** power supply.
6. **Assume** that there is still a **load** on every actuator. Proceed with caution.





Wrench Heel Die

1. Use the 3/4" wrench to **remove** the **Heel Die Roller Bolt** (B).
2. **Remove** the **Roller Bushing** (RB).
3. **Remove** the **Heel Die Roller** (R).
4. **Pull** out the **Heel Die Pin** (P).
5. **Pull out** the **Die Holder** (DH).
6. **Slide out** the **worn Die** (D).

Continued on next page.

Changing the Heel Dies (cont.)

7. Make sure the **back** and **sides** of the **new Die** are **clean**.
8. **Grease** the **back** of the **new Die**.
9. **Insert** the **new Die** into the Die Holder (DH) with the **teeth** of the Die **facing out**.
10. **Place** the **Die Holder** (DH) back **in** the **Die Pivot Block** (DB).
11. **Insert** the **Heel Die Pin** (P).
12. **Replace** the **Heel Die Rollers** (R).
13. **Replace** the **Roller Bushings** (RB).
14. Use the 3/4" wrench to **replace** the **Heel Die Roller Bolts** (B) and Lock Washers.

Part Numbers

Part Name	Part #
Die Roller Bolt (B)	999-806303
Die Holder Bolt Washers	999-810703
Die Roller (R)	061-20210
Roller Bushing (RB)	061-20208A
Die (D)	061-20194
Die Holder (DH)	061-30031

Spinner Maintenance

Notice

Spinner chain lubrication must be done during normal operation of the **Hawkjaw**. **Do not** run the spinner when the **Hawkjaw** is not on the pipe.

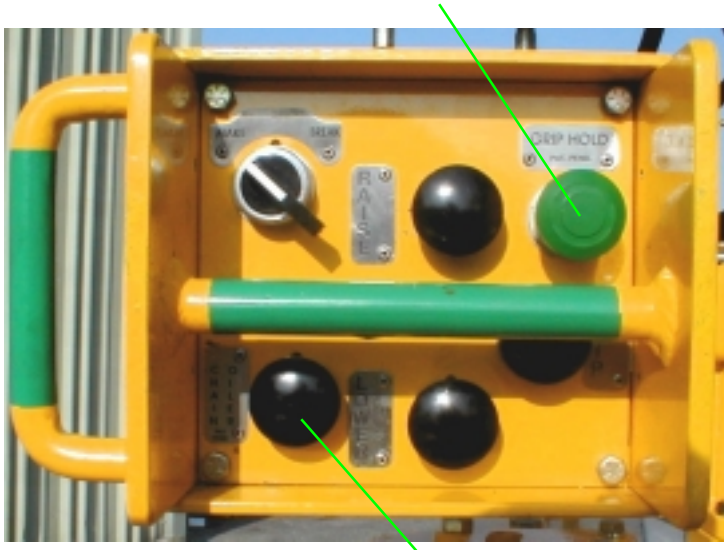
Initial Steps

1. Position the **Hawkjaw** for breakout.

Chain Lubrication

1. Pull the **Hawkjaw** onto the pipe.
2. Press in the **Grip Hold** (GH) button.
3. **Press and hold** the **Spin** (S) button. While holding down the **Spin** (S) button, **press and hold** the **Chain Oiler** (CO) button for **3 seconds**.
4. **Release** the **Spin** (S) button.
5. Pull out the **Grip Hold** (GH) button.

CAUTION:
This chain oiling system uses minimal amount of hydraulic oil from power unit - we suggest you monitor hydraulic oil level accordingly.



Chain oiler nozzle

NOTE: Clean nozzle screen as required

Spinner Maintenance

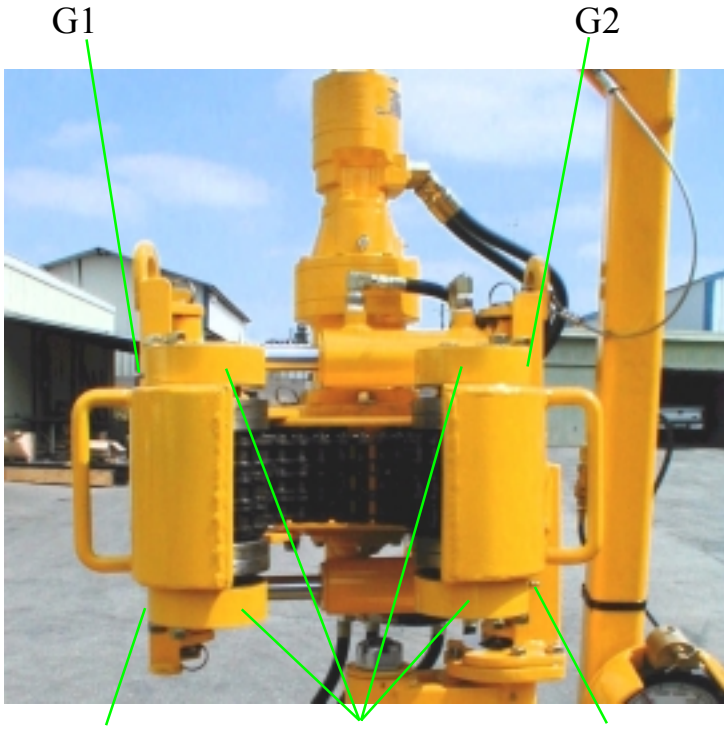
Grease Once per Month

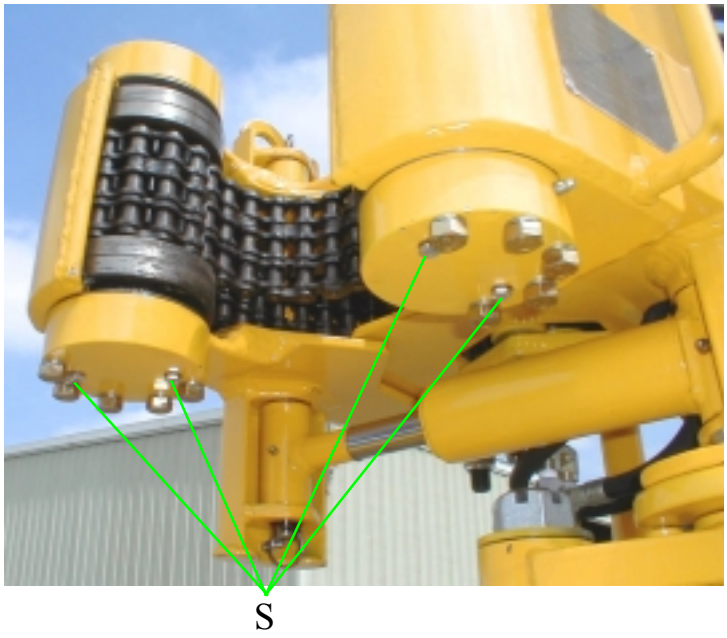
Initial Steps

1. Make sure the HawkJaw is off the drill pipe connection and in the **rest position** on the derrick.
2. **Shut down** the **Hydraulic power** unit.
3. **Press**, **push**, and **pull** all **control buttons repeatedly** to bleed hydraulic pressure.
4. **Press** the **E-Stop** (E) button on the **right control handle**.
5. **Disconnect** the **Air** power supply.
6. **Assume** that there is still a **load** on every actuator. Proceed with caution.

Drive Roller Sprocket Bear-

1. Use the 7/16" wrench to **remove one of** the **four small screws** (S) from the **top** of **each bearing cap** (BC).
2. **Pump** the **grease fittings** G1-G4 until grease comes out of the small screw hole.
3. Use the 7/16" wrench to **replace** the **small screws** (S).





Part Numbers

Part Name	Part #
Bearing Cap Screw (S)	999-805834
Straight Grease Fitting	016-1103K1

Spinner Maintenance

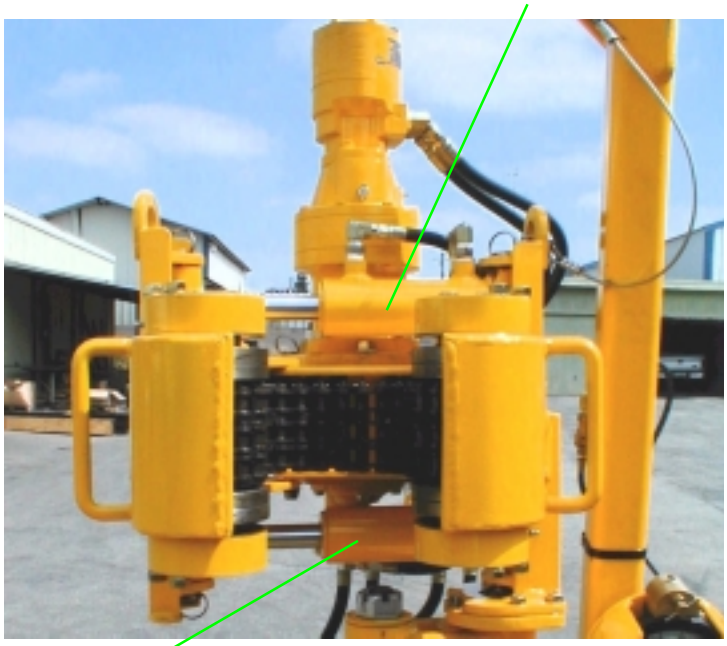
Grease Once per Month

Tools Required

Grease gun

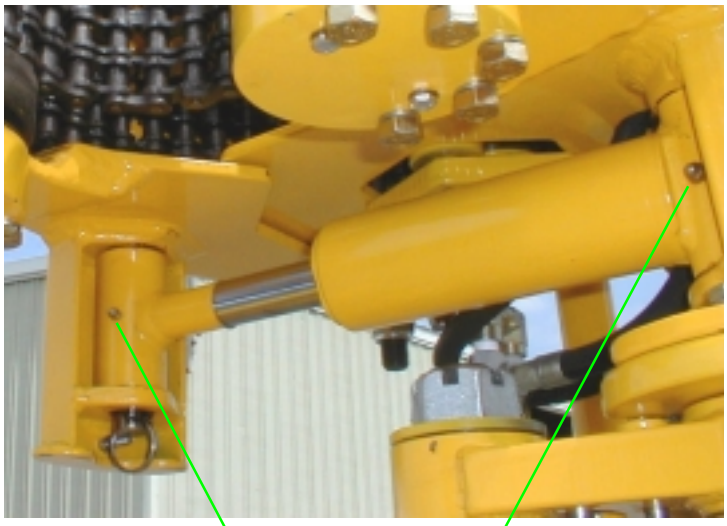
Spinner Grip Cylinders

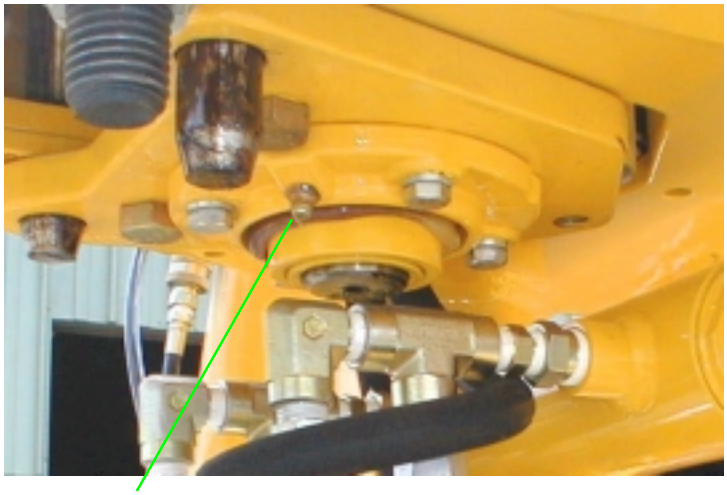
1. **Pump grease fitting** SC1-SC2 on the Top spinner grip cylinder (TC) and the Bottom spinner grip cylinder (BC).



Chain Drive Shaft Bearing

1. **Pump grease fitting** CB1.





Part Numbers

Part Name	Part #
Bearing Cap Screw (S)	999-805834
Straight Grease Fitting	016-1103K1

Spinner Maintenance

Grease Once per Month

Tools Required

Grease gun

Spinner Mount Sliding Tube

1. **Pump grease fittings** ST1-ST4.

Check Oil Level Once per Month

Lubricant Required

32 weight gear oil

Reducer Gear Box

1. Make sure the gear box **oil level** reaches the **top pipe plug** (P).

NOTE

Consistent lubrication of the Spinner increases performance and component life.

Part Numbers

Part Name	Part #
Bearing Cap Screw (S)	999-805834
Straight Grease Fitting	016-1103K1

Changing the Spinner Chain

Tools Required

7/16" wrench, Hammer, Needle-Nose Pliers

Initial Steps

1. Make sure the HawkJaw is off the drill pipe connection and in the **rest position** on the derrick.
2. **Shut down** the **Hydraulic power** unit.
3. **Press**, **push**, and **pull** all **control buttons repeatedly** to bleed hydraulic pressure.
4. **Press** the **E-Stop** (E) button on the **right control handle**.
5. **Disconnect** the **Air** power supply.
6. **Assume** that there is still a **load** on every actuator. Proceed with caution.

Chain

1. Make sure the **Spinner doors** (SD) are **open**.
2. **Remove** both **quick release pins** (QR).
3. Use the 7/16" wrench to **remove** the **four** rubber Safety shield **bolts** (SB).
4. **Remove** the rubber Safety **shield** (SS).
5. Use the 15/16" wrench to **remove** the **Spacer Bolts** (B).
6. **Remove** the **Spacers** (S).
7. **Slide Motor/Reducer Assembly** forward completely.

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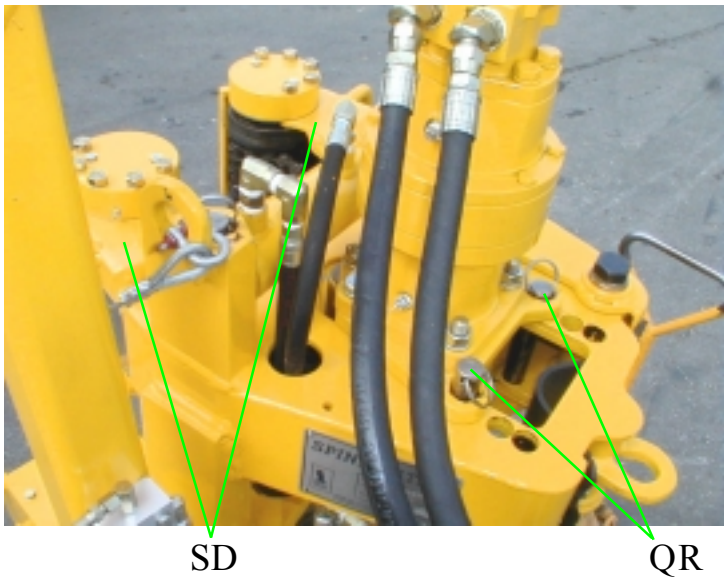
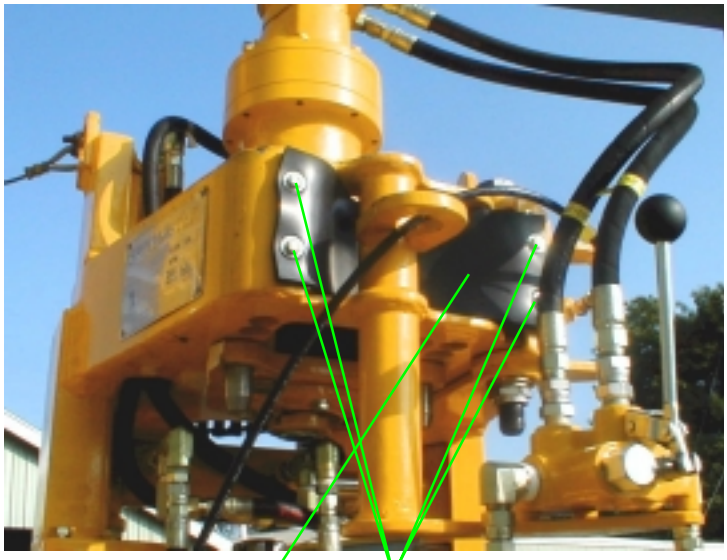
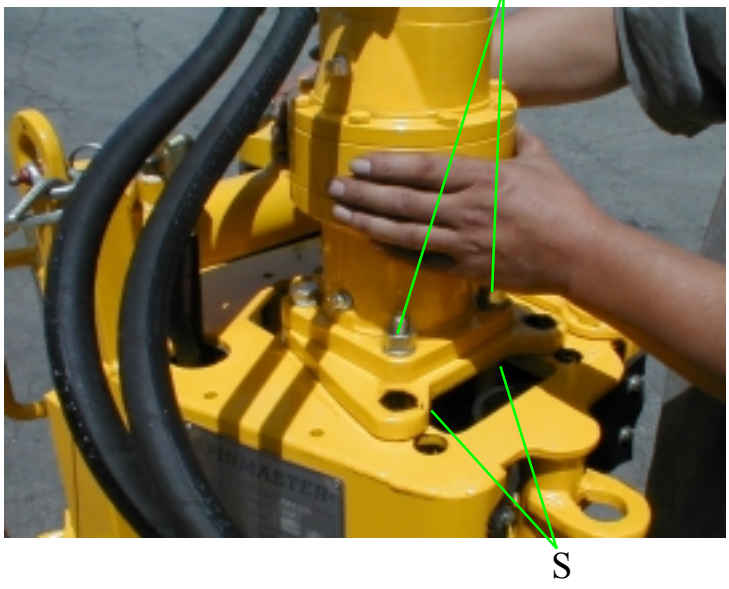
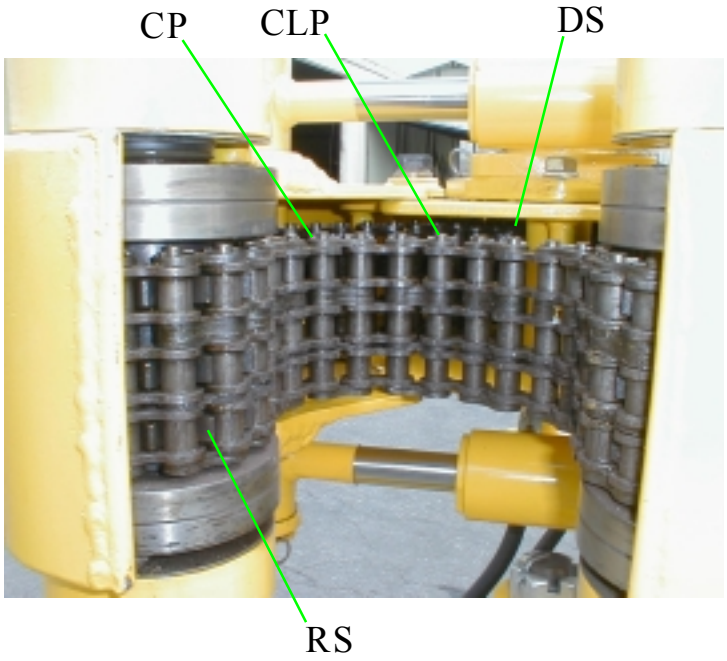






Changing the Spinner Chain (cont.)

8. From the front of the unit, use the Needle-nose pliers to **remove** the **Cotter pins** (CP) in one of the Chain links.
9. Use the hammer to **remove** the **Chain link pin** (CLP).
10. **Pull out** the **old chain**. Make sure the chain does not catch on the Drive sprocket (DS).
11. **Feed** the **chain** into the spinner **behind** the **Drive Sprocket** (DS) until both ends of the new chain meet at the roller sprockets (DRS).
12. **Feed** the **ends** of the **chain** around the **outside** of the **Drive roller sprockets** (DRS).
13. **Place** the **ends** of the new chain **together**.
14. **Insert** the **Master Link**.
15. **Place** the **End Cap** on the **Master Link**.
16. Use the Needle-nose pliers to **insert** the Master Link **Cotter Pins**.



Part Numbers

Part Name	Part #
Chain	031-24CHAIN
Chain Repair Kit	031-24CHAIN-RK

WARNING

Running a new chain with worn Drive Rollers severely shortens chain life. If the **Drive Roller Groove** is **no longer visible**, **replace** the **Drive Roller**.

Changing the Drive Rollers

Tools Required

3/4" wrench

Initial Steps

1. Make sure the HawkJaw is off the drill pipe connection and in the **rest position** on the derrick.
2. **Shut down** the **Hydraulic power** unit.
3. **Press**, **push**, and **pull** all **control buttons repeatedly** to bleed hydraulic pressure.
4. **Press** the **E-Stop** (E) button on the **right control handle**.
5. **Disconnect** the **Air** power supply.
6. **Assume** that there is still a **load** on every actuator. Proceed with caution.

Drive Rollers

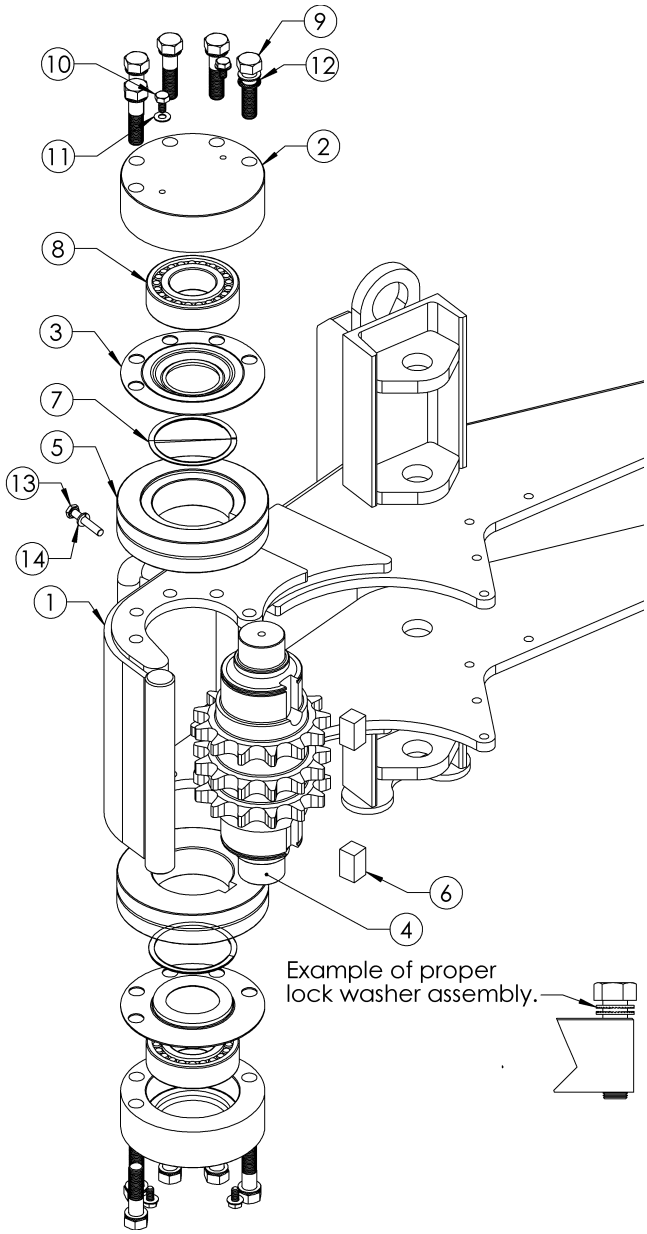
1. Use the 3/4" wrench to **remove** all Bearing Cap **Bolts** (9).
2. **Remove** the Bearing **Caps** (2) **and** Bearing **Seals** (3).
3. **Slide out** the **Drive Roller Sprockets** (4).
4. **Remove** the Drive Roller **Snap Rings** (7) .
5. **Remove** the **Drive Rollers** (5) **and Keys** (6).
6. **Slide on** the **new Drive Rollers** and **replace** the **Keys** (6).
7. **Replace** the Drive Roller **Snap Rings** (7).

Continued on next page.

Drive Rollers

Changing the Drive Rollers

8. **Slide in** the **Drive Roller Sprockets** (4) . **Make sure** the **"T"** on each Drive Roller Sprocket **faces up**.
9. **Replace** the Bearing **Caps** (2) and Bearing Seals (3).
10. Use the 3/4" wrench to **replace** all Bearing Cap **Bolts** (9). Use new Lock Washers (12) and red loctite when replacing the Bearing Cap Bolts (9). **Assemble** the **Lock Washers** (12) **as shown**. **Torque** Bearing Cap **Bolts** (9) to 75 lb. ft.



WARNING

Replace all four Drive Rollers. **Running** the **Spinner with worn Drive Rollers will damage** the **chain** and **hinder** Spinner **performance**.

Part Numbers

ITEM	PART NO./DESCRIPTION
1	25703-SR Case Assembly, Moving Arm
2	24622 Bearing Cap
3	24654 Bearing Seal Assembly
4	24623 Roller Sprocket
5	24649 Roller
6	24643 Key, Roller
7	RST-275-S Retainer Ring
8	24731 Sphere-Rol Bearing
9	806373_1.2-20 x 2.00 lg.Hex Bolt Grd. 9
10	805834_1.4-20 x .50 lg. Hex Bolt
11	811150_#14 Brass Washer
12	91074A033 Lock Washer Assembly, 1.2
13	805867 1.4-20 X 1 1.2 Hex Tap SS
14	810587_1.4 Lock Washer

Changing the Drive Roller Sprocket Bearings

Tools Required

Four 1/4"-20 x 1 1/2" Hex Tap SS (Part # 999-805867), 7/16" wrench, 3/4" wrench

Initial Steps

1. Make sure the HawkJaw is off the drill pipe connection and in the **rest position** on the derrick.
2. **Shut down** the **Hydraulic power** unit.
3. **Press**, **push**, and **pull** all **control buttons repeatedly** to bleed hydraulic pressure.
4. **Press** the **E-Stop** (E) button on the **right control handle**.
5. **Disconnect** the **Air** power supply.
6. **Assume** that there is still a **load** on every actuator. Proceed with caution.

Drive Roller Sprocket Bearings

1. Use the 3/4" wrench to **remove** all Bearing Cap **Bolts** (1).
2. **Remove** the Bearing **Caps** (3) and Bearing Seals (5).
3. Use the 7/16" wrench to remove the four small screws in the top of the Bearing Caps (3).
4. Use the 7/16" wrench to **screw** in the **Hex Tap screws into** the four small **threaded holes in** the **top of** the **Bearing Caps** (3). As the screws tighten, the bearing (4) is

Continued on next page.

Part Numbers

pushed out. **Tighten** the **Hex Tap screws evenly**, or the bearing (4) will tilt and lodge in the bearing cap (3).

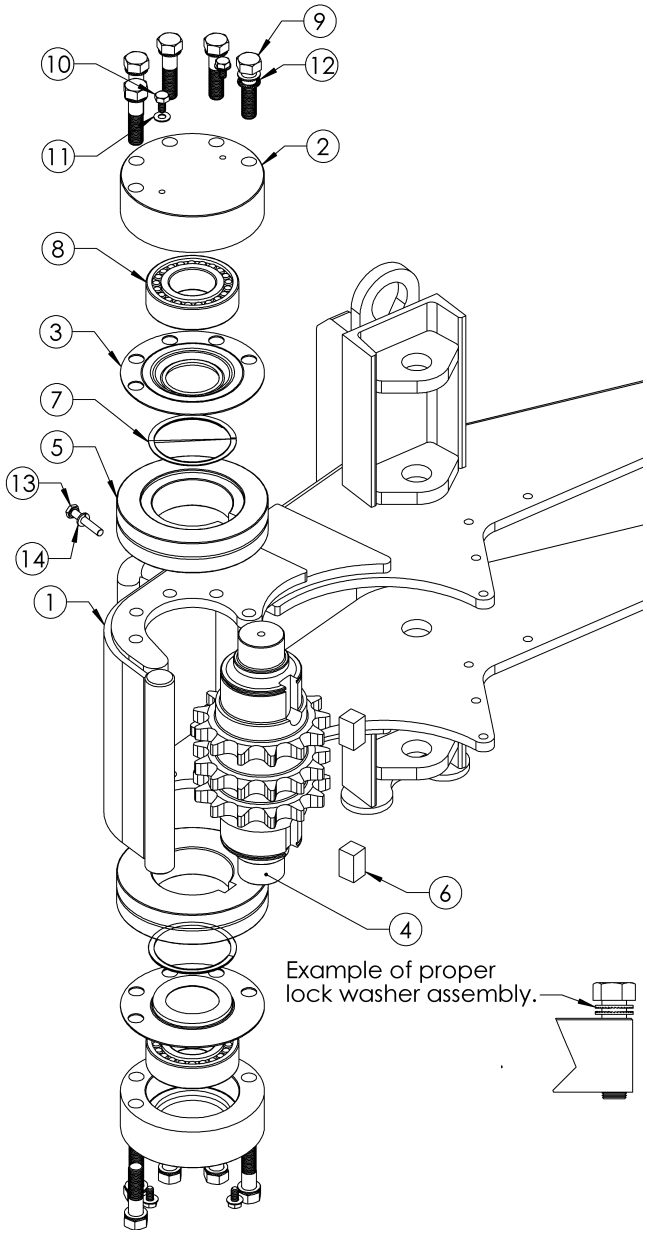
5. **Insert** the **new bearings** into the Bearing Caps (3).
6. **Replace** the Bearing **Caps** (3) and Bearing Seals (5).
7. Use the 3/4" wrench to **replace** all Bearing Cap **Bolts** (1). Use new Lock Washers (2) and Red Loctite when replacing the Bearing Cap Bolts (1). **Assemble** the **Lock Washers** (2) **as shown**. **Torque** Bearing Cap **Bolts** (1) to 75 lb. ft.

NOTE

If the **bearing** (8) gets **stuck** in the bearing cap (2) when disassembling, and no Hex Tap screws are available, **remove** the Hex Tap **screw** (13) **on** the **spinner**. **Use** the Hex Tap **Screw** (13) **to push out** the **bearing** (8) through one or both of the tapped holes on the top of the **bearing cap** (2). **Replace** the Hex Tap **Screw** (13) in the Spinner case (1) after removing the bearing (8).

NOTE

Hawk recommends that all four bearings (4) be replaced each time a bearing (4) is changed. Always use new lock washers (2) when replacing bearing cap bolts (1). It is also recommended that all four bearing seals (5) be replaced each time a bearing (4) is changed.

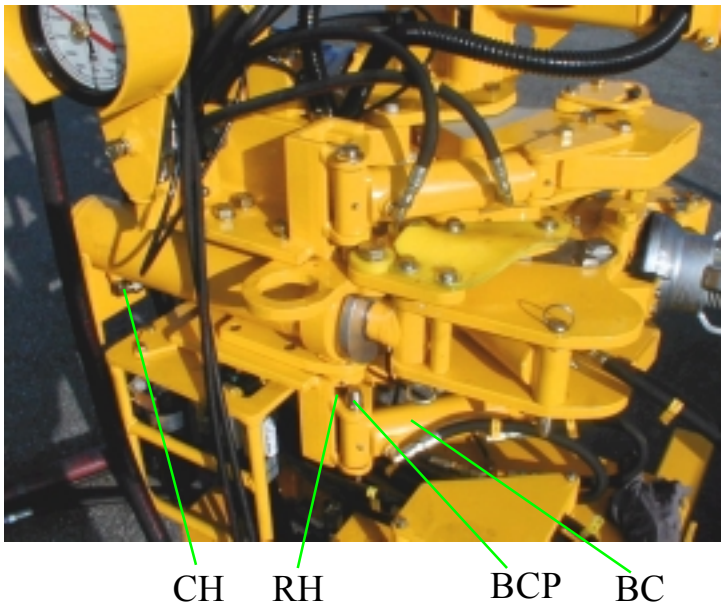


Part Numbers

ITEM	PART NO./DESCRIPTION
1	25703-SR Case Assembly, Moving Arm
2	24622 Bearing Cap
3	24654 Bearing Seal Assembly
4	24623 Roller Sprocket
5	24649 Roller
6	24643 Key, Roller
7	RST-275-S Retainer Ring
8	24731 Sphere-Rol Bearing
9	806373_1.2-20 x 2.00 lg.Hex Bolt Grd. 9
10	805834_1.4-20 x .50 lg. Hex Bolt
11	811150_#14 Brass Washer
12	91074A033 Lock Washer Assembly, 1.2
13	805867 1.4-20 X 1 1.2 Hex Tap SS
14	810587_1.4 Lock Washer

Changing All Other Spinner Parts

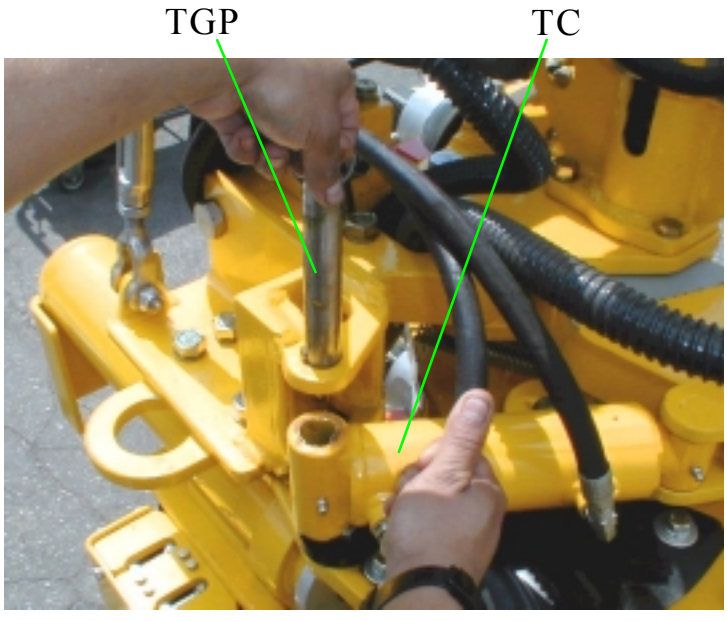
Changing the Torque Cylinder



Initial Steps

1. Make sure the HawkJaw is off the drill pipe connection and in the **rest position** on the derrick.
2. **Shut down** the **Hydraulic power** unit.
3. **Press**, **push**, and **pull** all **control buttons repeatedly** to bleed hydraulic pressure.
4. **Press** the **E-Stop** (E) button on the **right control handle**.
5. **Disconnect** the **Air** power supply.
6. **Assume** that there is still a **load** on every actuator. Proceed with caution.

Torque Cylinder



1. **Pull** out the **Bottom Grip Cylinder Cap** side **Pin** (BCP).
2. **Pivot** the **Bottom Grip Cylinder** (BC) **away** from the Torque cylinder Rod side hose (RH).
3. Use the 1" and 15/16" wrench to **slowly loosen** the **Cap** side **Hose** (CH). **Check** for **fluid flow**. **Bleed** any **pressure**. **Remove** the **Cap** side **Hose** (CH).

Changing the Torque Cylinder

4. **Pull** out the **Top Grip Cylinder Rod** side **Pin** (TGP).
5. **Pivot** out the **Top Grip Cylinder** (TC) to expose the Torque Cylinder Rod Pin (P).
6. **Remove** the Torque Cylinder Rod Pin **Rubber Safety Cover** (S). This feature on some older models.
7. **Pull** out the Torque Cylinder **Safety Clip** (SC).
8. **Pull** out the **Torque Cylinder Rod Pin** (P).
9. Use the 1 1/8" wrench to **slowly loosen** the **Rod** side **Hose** (RH) on the rod side of the torque cylinder. **Check** for **fluid flow**. **Bleed** any **pressure**. **Disconnect** the **Rod** side **Hose** (RH).

WARNING:
Safety Cover (S) must remain on the unit during operation or injury may result.

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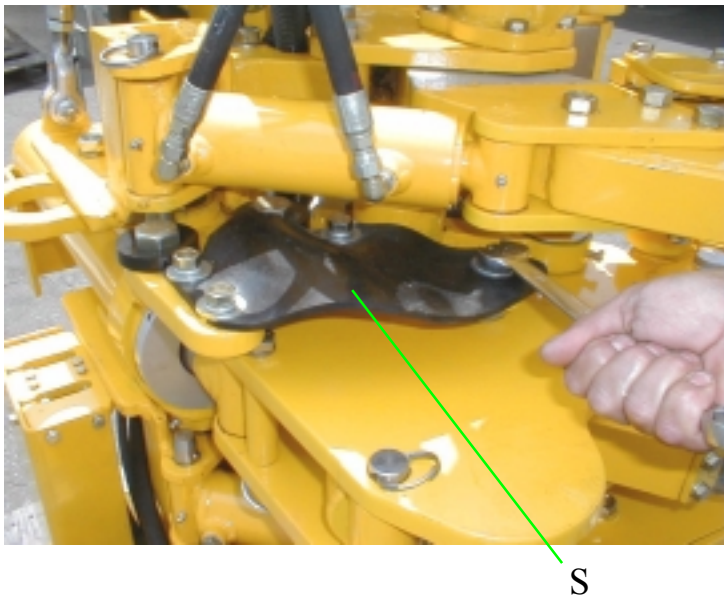
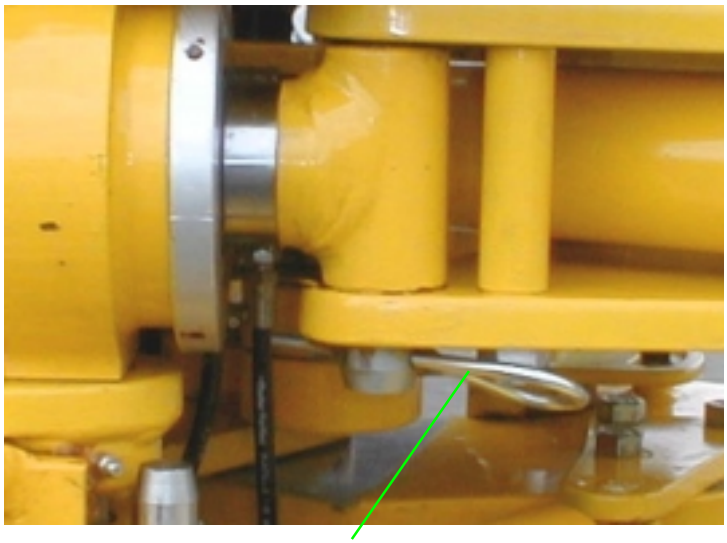
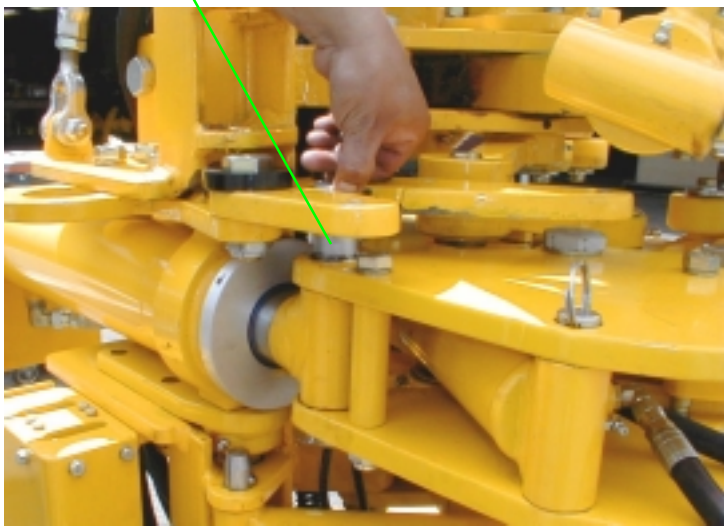
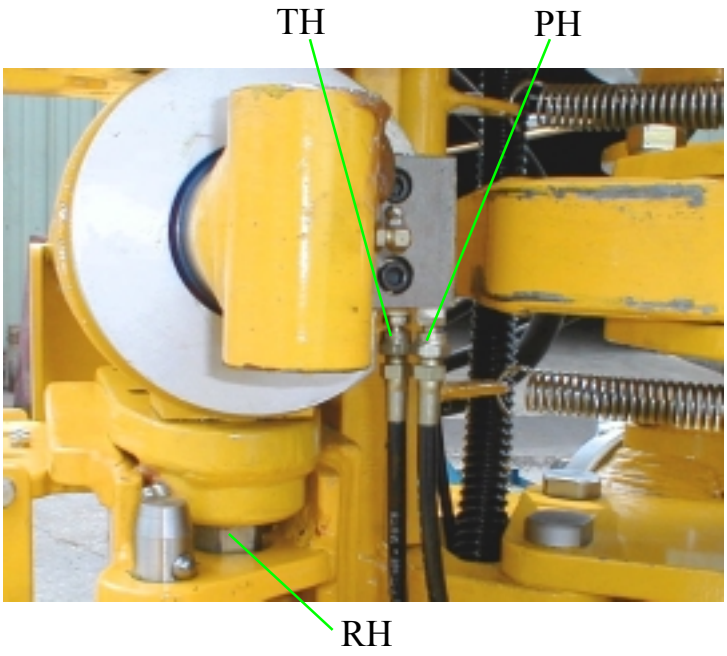


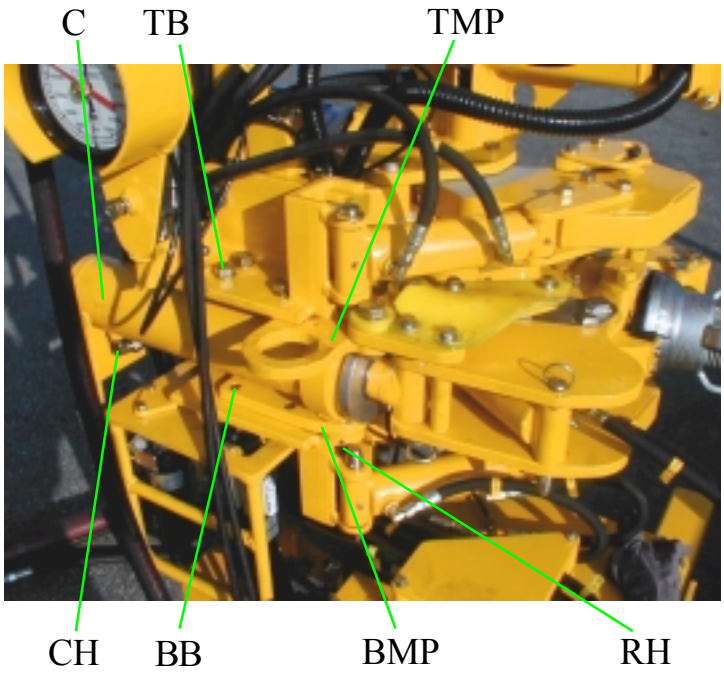




Changing the Torque Cylinder

10. Use the 1/2" and 9/16" wrench to **slowly loosen** the **Low** Torque Warning System **Pressure Hose** (PH). **Check** for **fluid flow**. **Bleed** any **pressure**. **Disconnect** the **Pressure Hose** (PH).
11. Use the 1/2" and 9/16" wrench to **slowly loosen** the **Low** Torque Warning System **Tank Hose** (TH). **Check** for **fluid flow**. **Bleed** any **pressure**. **Disconnect** the **Tank Hose** (TH).
12. Use the 1 1/8" wrench to **remove** the **Top Torque Cylinder Mount Bolts** (TB).
13. Use the 1 1/8" wrench to **remove** the **Bottom Torque Cylinder Mount Bolts** (BB).
14. **Slide out** the **Torque Cylinder** (C).
15. **Remove** the **Top** Trunion Mount **Plate** (TMP) and the **Bottom** Trunion Mount **Plate** (BMP).
16. **Place** the **Top** Trunion Mount **Plate** (TMP) and the **Bottom** Trunion Mount **Plate** (BMP) on the **new Torque Cylinder**.
17. **Slide in** the **new Torque Cylinder**.
18. Use the 1/2" and 9/16" wrench to **connect** the **Low** Torque Warning System **Pressure Hose** (PH) and **Low** Torque Warning System **Tank Hose** (TH). See explosion drawings in the back of the manual.





Changing the Torque Cylinder

19. Use the 1" and 15/16" wrench to **connect** the **Rod** side **Hose** (RH) and the **Cap** side **Hose** (CH).
20. **Insert** the Torque Cylinder **Rod Pin** (P).
21. **Insert** the Torque Cylinder **Safety Clip** (SC).
22. Use the 1 1/8" wrench to **replace** the **Top** Torque Cylinder **Mount Bolts** (TB). Assemble washers as shown.
23. Use the 1 1/8" wrench to **replace** the **Bottom** Torque Cylinder **Mount Bolts** (BB). Assemble washers as shown.
24. **Slide** the **Top Grip Cylinder** into the Top Grip Cylinder **Cap** side **Eye** (TE).
25. **Insert** the **Top Grip Cylinder Pin** (TGP).
26. **Slide** the **Bottom Grip Cylinder** into the Bottom Grip Cylinder **Cap** side **Eye** (BE).
27. **Insert** the **Bottom Grip Cylinder Pin** (BCP).

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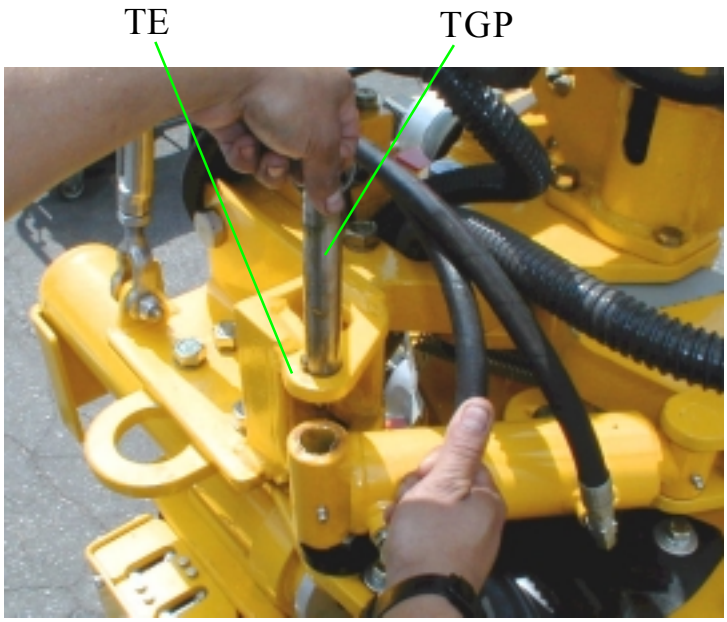
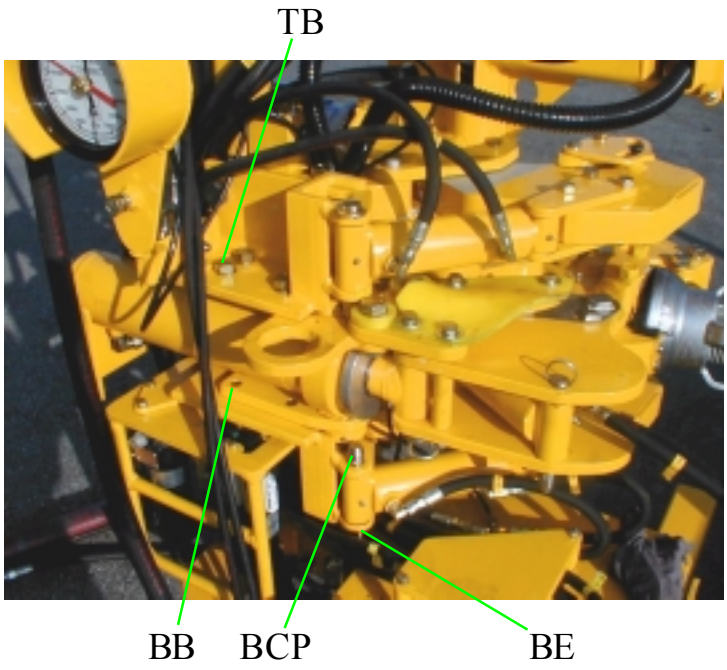
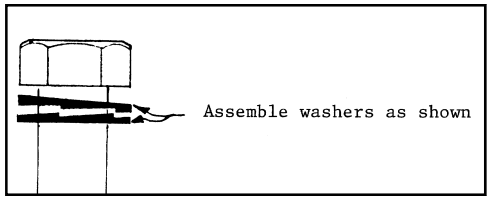






Changing the Torque Cylinder

Part Numbers

Part Name	Part #
Mount Bolt (TB, BB)	999-806529
Lock Washers	031- 91074A036
Safety Clip (SC)	061- 98335A114
Torque Cylinder Rod Pin (P)	061-30053
Torque Cylinder (C)	061-J20

WARNING

Make sure the Torque Cylinder Rod and Cap side Hoses are properly connected.

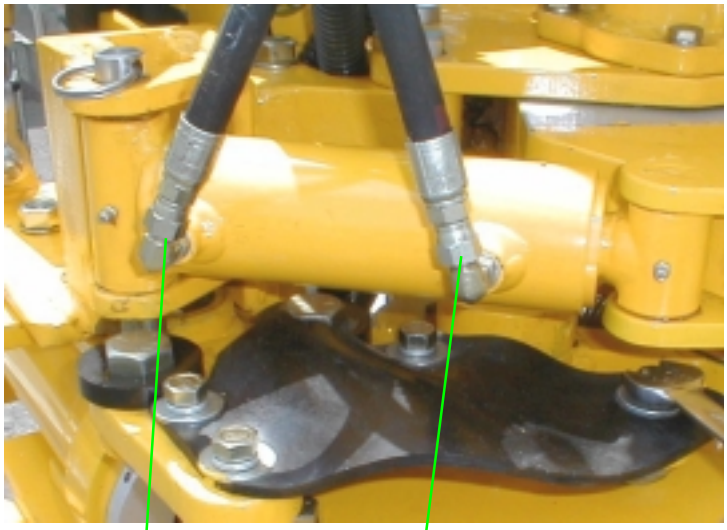
WARNING

Make sure the Low Torque Warning System Pressure and Tank Hoses are properly connected.

Changing the Grip Cylinders

Initial Steps

1. Make sure the HawkJaw is off the drill pipe connection and in the **rest position** on the derrick.
2. **Shut down** the **Hydraulic power** unit.
3. **Press**, **push**, and **pull** all **control buttons repeatedly** to bleed hydraulic pressure.
4. **Disconnect** the **Air** power supply.
5. **Press**, **push**, and **pull** all **control buttons repeatedly** to bleed air pressure.
6. **Assume** that there is still a **load** on every actuator. Proceed with caution.



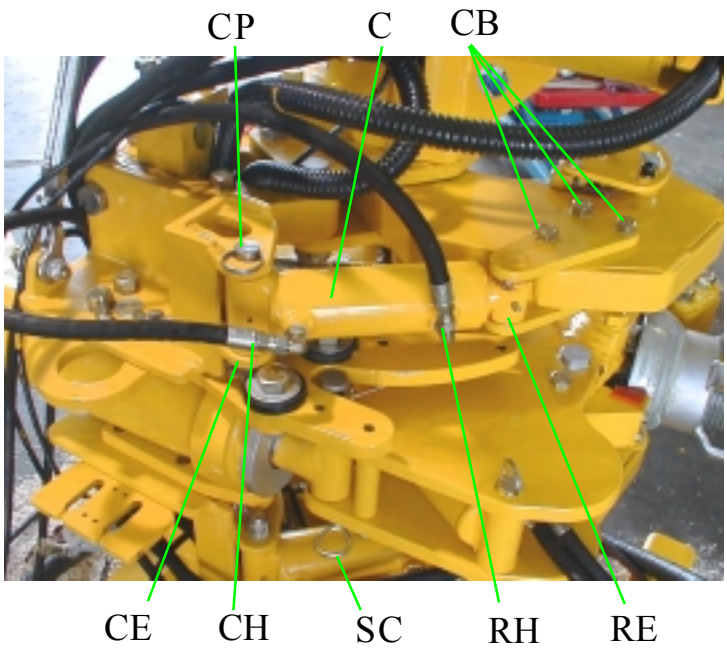
Top Grip Cylinder

1. Use the Two 11/16" wrenches to **slowly loosen** the **Rod** side **Hose** (RH). **Check** for **fluid flow**. **Bleed** any **pressure**. **Disconnect** the **Rod** side **Hose** (RH).
2. Use the Two 11/16" wrenches to **slowly loosen** the **Cap** side **Hose** (CH). **Check** for **fluid flow**. **Bleed** any **pressure**. **Disconnect** the **Cap** side **Hose** (CH).

Continued on next page.

Changing the Grip Cylinders

3. **Pull** out the Grip Cylinder **Cap** side **Pin** (CP).
4. **Remove 3 clevis bolts** (CB) using the **15/16" wrench.**
5. **Slide out** the **Grip Cylinder** (C).
6. **Place** the **new Grip Cylinder** into the **Cap** side **Eye** (CE) and **Rod** side **Eye** (RE).
7. **Insert** the Top Grip Cylinder **Cap** side **Pin** (CP).
8. **Replace** the **3 clevis bolts** (CB) using the **15/16" wrench**.
9. Use the Two 11/16" wrenches to **connect** the **Cap** side **Hose** (CH).
10. Use the Two 11/16" wrenches to **connect** the **Rod** side **Hose** (RH).



Part Numbers

Part Name	Part #
Grip Cylinder Cap Pin (CP)	061-98404A874
Grip Cylinder Rod Pin (RP)	061-98404A888C
Grip Cylinder (C)	061-J26

WARNING

Make sure the Grip Cylinder Rod and Cap side Hoses are properly connected.

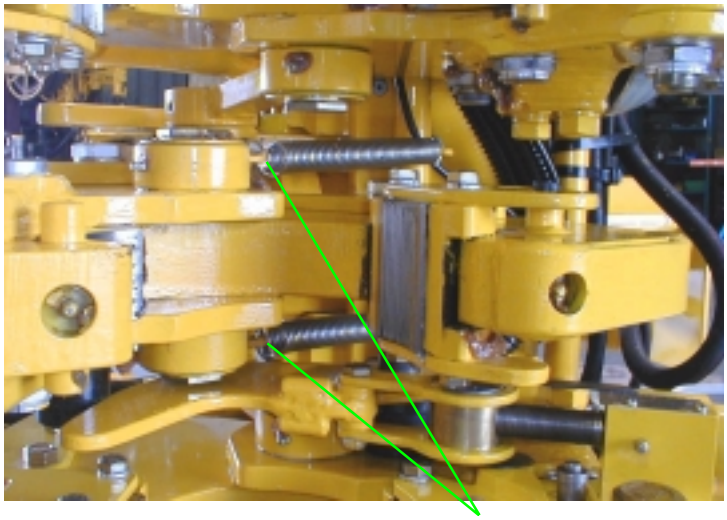
Changing the Grip Cylinders

Initial Steps

1. Make sure the HawkJaw is off the drill pipe connection and in the **rest position** on the derrick.
2. **Shut down** the **Hydraulic power** unit.
3. **Press**, **push**, and **pull** all **control buttons repeatedly** to bleed hydraulic pressure.
4. **Disconnect** the **Air** power supply.
5. **Assume** that there is still a **load** on every actuator. Proceed with caution.

Middle Grip Cylinder

1. Adjust the Middle Wrench (MW) to 3 1/2".
2. **Unhook** the **retract springs** (RS) on the middle wrench using a pair of pliars or vice grip pliars.
3. **Swing** the entire **middle wrench assembly** out toward the left of the unit



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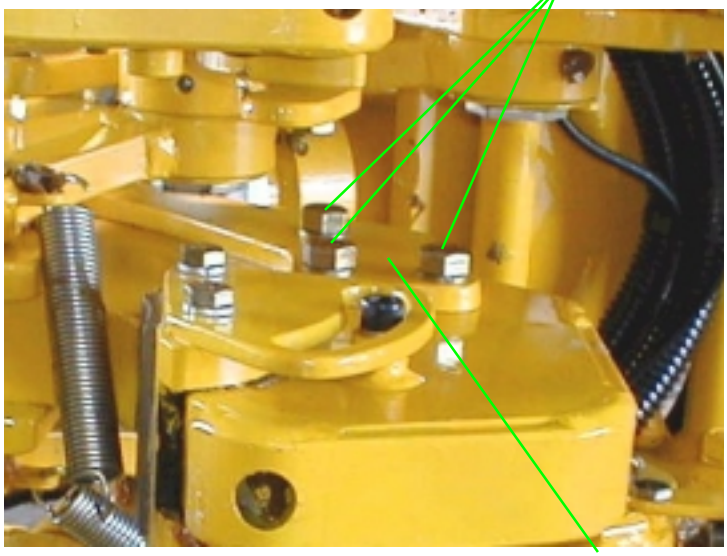
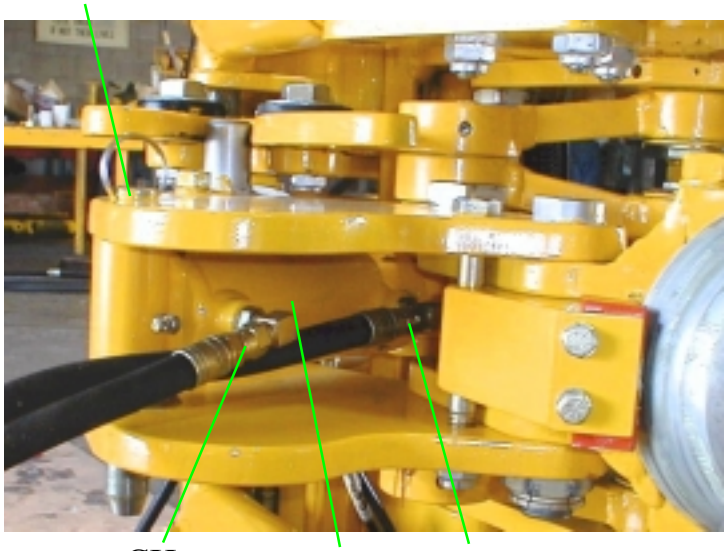
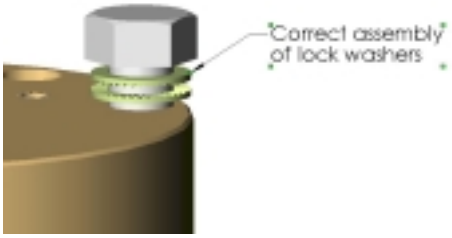
Changing the Grip Cylinders

7. **Remove** the **3 bolts** (B) that mount the grip cylinder **Clevis Plate** (CP). Then remove the **Hook Clevis Plate** (CP).
10. **Pull** out the **Middle Grip Cylinder Cap** side **Pin** (MCP).
11. **Slide out** the **Middle Grip Cylinder** (MC).
12. Use the Two 11/16" wrenches to **slowly loosen** the **Rod** side **Hose** (RH). **Check** for **fluid flow**. **Bleed** any **pressure**. **Disconnect** the **Rod** side **Hose** (RH).
13. Use the Two 11/16" wrenches to **slowly loosen** the **Cap** side **Hose** (CH). **Check** for **fluid flow**. **Bleed** any **pressure**. **Disconnect** the **Cap** side **Hose** (CH).
14. **Replace** the **Middle Grip Cylinder** (MC).
15. Use the Two 11/16" wrenches to **connect** the **Cap** side **Hose** (CH).
16. Use the Two 11/16" wrenches to **connect** the **Rod** side **Hose** (RH).
17. With the **Middle Grip Cylinder** in place, **replace** the **Clevis Plate** (CP). Be sure the **rod** on the **Hook Clevis Plate** assembly goes through the **eye** on the **cylinder rod**.
18. **Replace** the **3 bolts** (B) in the **Hook Clevis Plate** (CP).
20. **Insert** the **Middle Grip Cylinder Cap** side **Pin** (MCP).







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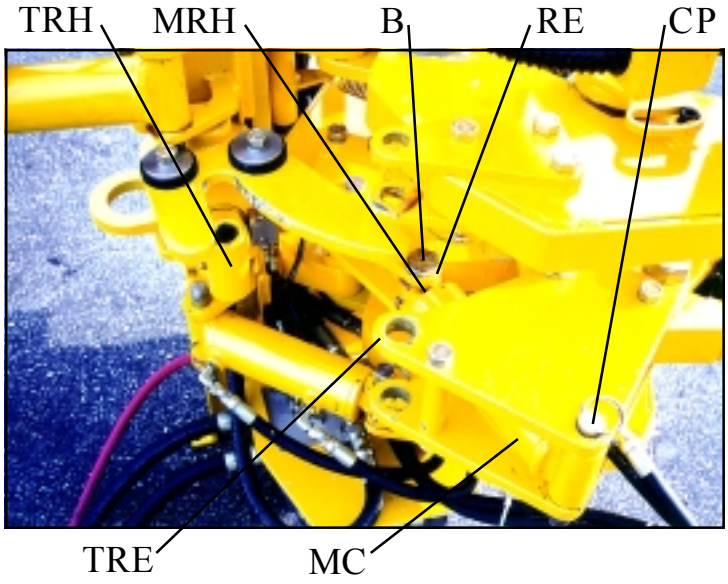
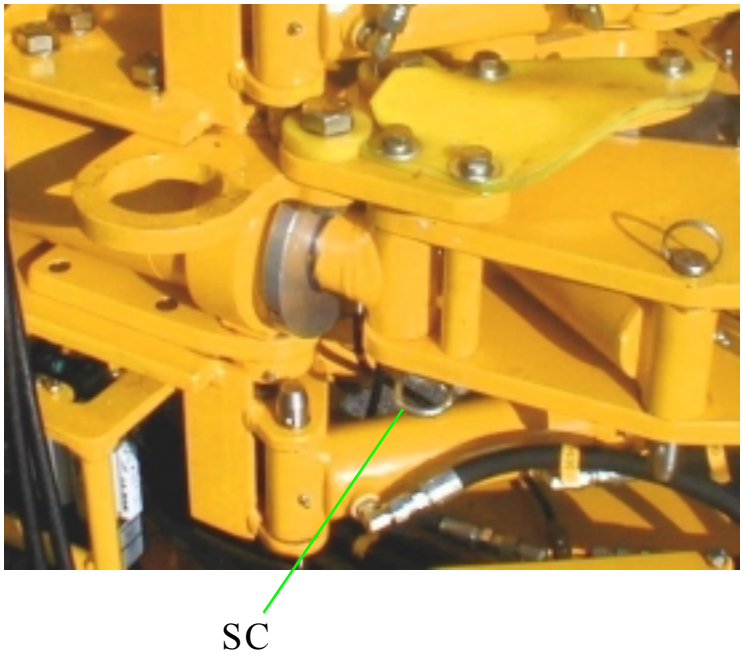
Changing the Grip Cylinders

21. **Place** the **Torque** Cylinder **Rod Head** (TRH) into the **Torque** Cylinder **Rod** side **Eye** (TRE).
22. **Insert** the Torque Cylinder **Rod Pin** (TRP).
23. Insert the **Torque Cylinder Safety Clip** (SC).





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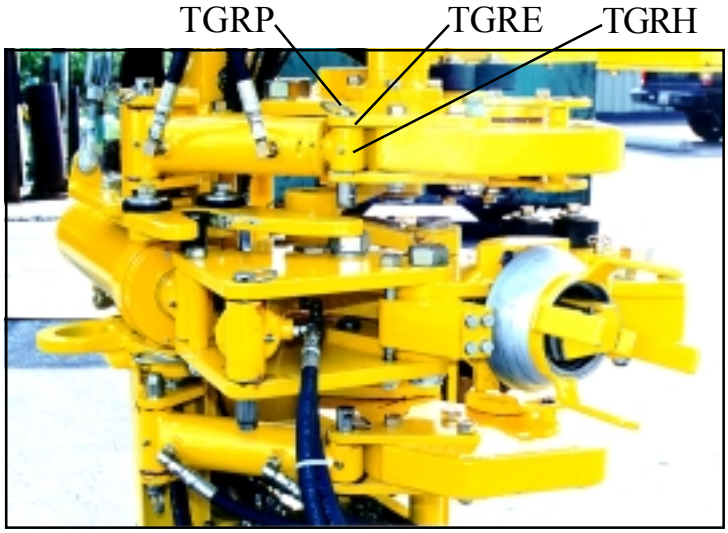
Changing the Grip Cylinders

24. **Place** the **Top Grip Cylinder Rod** side **Eye** (TGRE) into the **Top Grip Cylinder Rod Head** (TGRH).
25. **Insert** the **Top Grip Cylinder Rod** side **Pin** (TGRP).



Part Numbers

Part Name	Part #
Lock Washers	031-91074A038
Grip Cylinder Rod Bolt (B)	061-20215
Grip Cylinder Cap Pin (CP)	061-98404A888B
Grip Cylinder (MC)	061-J26

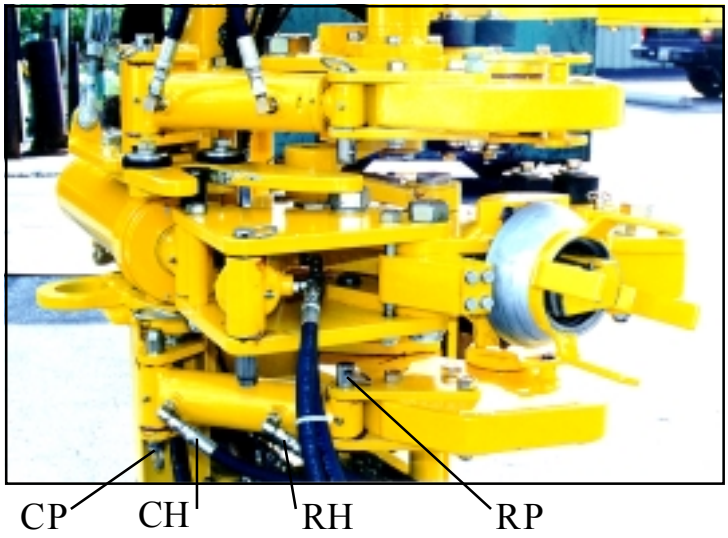
WARNING
Make sure the Grip Cylinder Rod and Cap side Hoses are properly connected.

WARNING
Make sure the Safety Cover (SC) is replaced or bodily injury may result.

Changing the Grip Cylinders

Tools Required

Two 11/16" wrenches



Initial Steps

1. Make sure the HawkJaw is off the drill pipe connection and in the **rest position** on the derrick.
2. **Shut down** the **Hydraulic power** unit.
3. **Press**, **push**, and **pull** all **control buttons repeatedly** to bleed hydraulic pressure.
4. **Disconnect** the **Air** power supply.
5. **Press**, **push**, and **pull** all **control buttons repeatedly** to bleed air pressure.
6. **Assume** that there is still a **load** on every actuator. Proceed with caution.

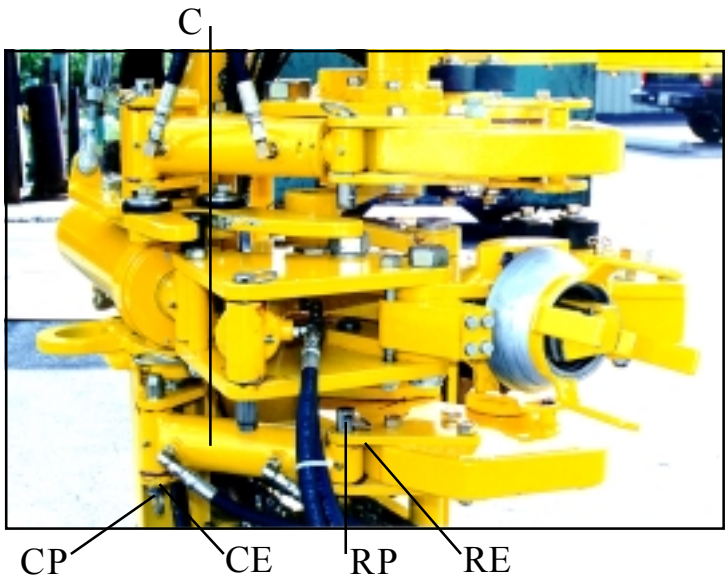
Bottom Grip Cylinder

1. Use the Two 11/16" wrenches to **slowly loosen** the **Rod** side **Hose** (RH). **Check** for **fluid flow**. **Bleed** any **pressure**. **Disconnect** the **Rod** side **Hose** (RH).
2. Use the Two 11/16" wrenches to **slowly loosen** the **Cap** side **Hose** (CH). **Check** for **fluid flow**. **Bleed** any **pressure**. **Disconnect** the **Cap** side **Hose** (CH).

Continued on next page.

Changing the Grip Cylinders

3. **Pull** out the Grip Cylinder **Cap** side **Pin** (CP).
4. **Pull** out the Grip Cylinder **Rod** side **Pin** (RP).
5. **Slide out** the **Grip Cylinder** (C).
6. **Place** the **new Grip Cylinder** into the **Cap** side **Eye** (CE) and **Rod** side **Eye** (RE).
7. **Insert** the Grip Cylinder **Cap** side **Pin** (CP).
8. **Insert** the Grip Cylinder **Rod** side **Pin** (RP).
9. Use the Two 11/16" wrenches to **connect** the **Cap** side **Hose** (CH).
10. Use the Two 11/16" wrenches to **connect** the **Rod Hose** (RH).



Part Numbers

Part Name	Part #
Grip Cylinder Cap Pin (CP)	061-98404A874
Grip Cylinder Rod Pin (RP)	061-98404A888C
Grip Cylinder (C)	061-J26

WARNING

Make sure the Grip Cylinder Rod and Cap side Hoses are properly connected.

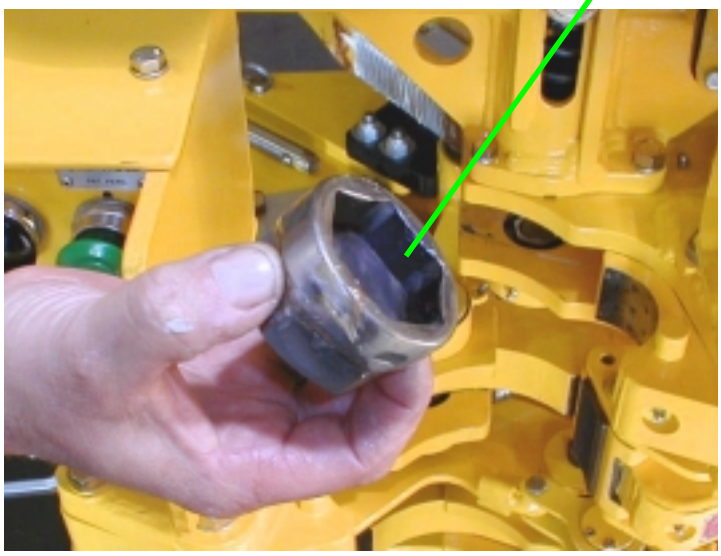
NOTE

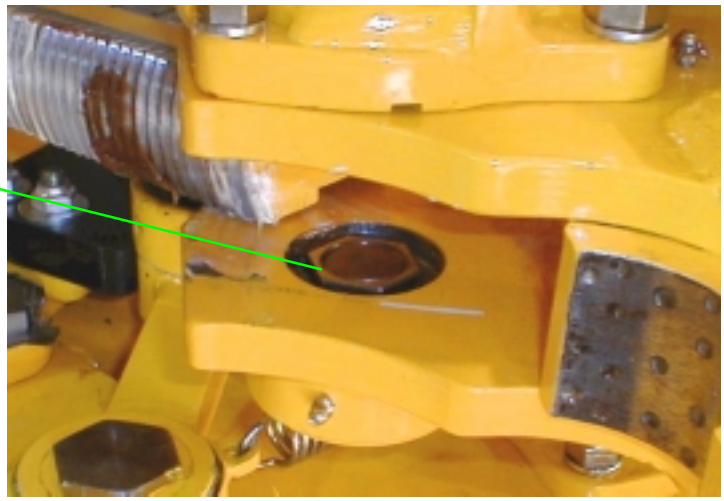
Consistent lubrication of the Spinner increases performance and component life.

Removing Linkage Bolts

Special Tool 3004A-TOOL

1. **Locate** the **30004A-TOOL** (T) in the storage box on the Hawkjaw transportation pallet.
2. **Remove** the to gain access to the **linkage bolt jam nut** (JN) by removing the **adjust nut**, **nut retainer**, and **nut lock assembly**. Then slide the hook clear of the jam nut.
3. **Place** the tool on the jam nut. The jam nut can be loosened using any **1 7/8" wrench**.





WARNING

When reinstalling linkage and linkage bolts, be sure to reinstall the linkage bolt jam nuts. Failure to reinstall the jams nuts may cause poor unit performance due to sagging of middle wrench.

Notes

Trouble Shooting

Symptom	Remedy
Hose leaks.	• **Replace** the **hose**.
Hose fitting leaks.	• **Tighten** the **fitting**. • **Replace** the **fitting**.
Hydraulic fitting leaks.	• **Tighten** the **fitting**. • R**eplace** the **fitting**.
Main hydraulic manifold leaks hydraulic fluid.	• **Tighten** the hydraulic valve retainer **bolts** and/or replace "O" ring.
All Grip cylinders extend, and the Torque cylinder extends slowly.	• The **Pressure** and **Tank** lines are **switched**. Properly **connect** the Pressure and Tank **lines**. See Operation, p. 14.
Dies do not grip pipe across from each other.	• Adjust the **wrenches** and the **pipe stop index** to the **OD** tool joint **size**.
Dies slide on the drill pipe during make up or break out.	• Adjust the **pipe stop index** and the **wrenches** to the **OD** tool joint **size**. • The **dies** are **worn out**. **Replace** the **dies**.
Spinner chain slips on the drill pipe tube.	• The spinner is adjusted too large for the drill pipe tube. **Adjust** the **spinner** to the **correct pipe size**. • The spinner **chain** is **worn out**. **Replace** the spinner **chain**.
Spinner chain wears out prematurely.	• **Lubricate** the spinner **chain** using the oiler button. • **Running** the **spinner** with **worn Drive rollers** severely **shortens chain life.** If the Drive RollerGroove is no longer visible, **replace** the **Drive rollers**. **Inspect** the **chain**. **Replace** the **chain** if the **links** are **worn flat**.

Trouble Shooting

Symptom	Remedy
Spinner performance and speed not up to par, or spinner doors close on the drill pipe tube, but the pipe does not rotate down to the drill pipe connection shoulder.	• The **Drive motor** is **worn out**. With **filtered hydraulic fluid** through a Hawk approved filter, the **Drive motor** is a **long term wear item**. **If all other rotating members** on the spinner **work**, **inspect** the **rotating group**, **bearings** and **seals** for wear. Replace where necessary.
Hawkjaw performance and speed not up to par.	• The **filter element** is **clogged**. **Replace** the **filter** element. • **Check** the lead-in **pressure and tank lines** for any **obstructions**. Also **check** the **quick disconnects** to see that they are **securely tightened**. A bad quick disconnect can cause the Hawkjaw to malfunction. Replace the faulty connector. • The **air pressure** is **low**. **Increase** the **air pressure** to the HawkJaw. • The **hydraulic pressure** is **low**. **Increase** the **hydraulic pressure**. **Do not increase** the pressure **over 2600 psi**, or the **hydraulic fluid will** pass over the relief valve and **heat up** the hydraulic fluid. This will cause **damage** to the **HawkJaw** and to the **pump**, and will severely shorten component life. • Check to **make sure** the **hydraulic power unit** is producing **2600 psi at 20-35 gpm**. • Check to **make sure** the hydraulic power unit **pressure compensator setting** is at **2600 psi**. • There ia s **leak** in the **hydraulic system**. **Check** for **visual leaks** in the hoses, fittings, manifolds, cylinder rod heads, or cylinder rod wipter seals. **Replace** necessary **components**. • There ia s **leak** in the **hydraulic system**. **Operate** the Hawkjaw. **Feel** the outside of all **actuators.** If a portion of the **cylinder surface** is **too hot** to leave your hand on the cylinder, the **leak** is **inside** the **cylinder**. **Replace** the cylinder **seals**. If necessary, replace the cylinder.

Continued on next page.

Trouble Shooting

Symptom	Remedy
While torquing pipe, a desired torque setting cannot be achieved or the torque control valve will not effect the torque output of the Hawkjaw.	• The **Hawkjaw** may have an **obstructed** tank **lead-in hose** or **quick disconnect**. Clear the tank line obstruction and or tighten or replace tank line quick disconnect. • Make sure the **Low Torque Warning System** pressure and tank hoses are properly connected.
Hydraulic fluid heats up.	• **Check** that the pump **pressure compensator setting** is at **2600 psi**. If the pump pressure compensator setting is above the pressure relief valve setting on the HawkJaw or the pressure relief valve setting on the hydraulic power unit, the hydraulic fluid will heat up rapidly. • There is a **leak** in the **hydraulic system**. • **Check** that the pump **pressure compensator setting** is at **2600 psi**. If the pump pressure compensator setting is above the pressure relief valve setting on the HawkJaw or the pressure relief valve setting on the hydraulic power unit, the hydraulic fluid will heat up rapidly. • There is a **leak** in the **hydraulic system**. • **If** there are **no leaks** in the hydraulic system, and the pump **pressure compensator setting** is at **2600 psi** on a known, tested hydraulic power unit, and the hydraulic **power unit pressure relief valve** is **set above** the pump **pressure compensator setting** and the hydraulic **fluid still heats up**, then the **pressure relief valve setting** on the HawkJaw has been **changed**. The pressure relief valve adjustment is set at Hawk Industries. Under no circumstances should this pressure relief valve be adjusted. **Adjusting** the **pressure relief valve setting voids** the **warranty** and can **cause** severe **damage** to the **HawkJaw** and the **hydraulic power unit** and shorten component life. However, **if** this **valve** has been **adjusted below 2600 psi**, and the **pressure compensator setting** is at **2600 psi**, the hydraulic **fluid will** pass over the pressure relief valve. This will **heat up** the hydraulic fluid rapidly. Properly **set** the **pressure relief valve adjustment**. On a

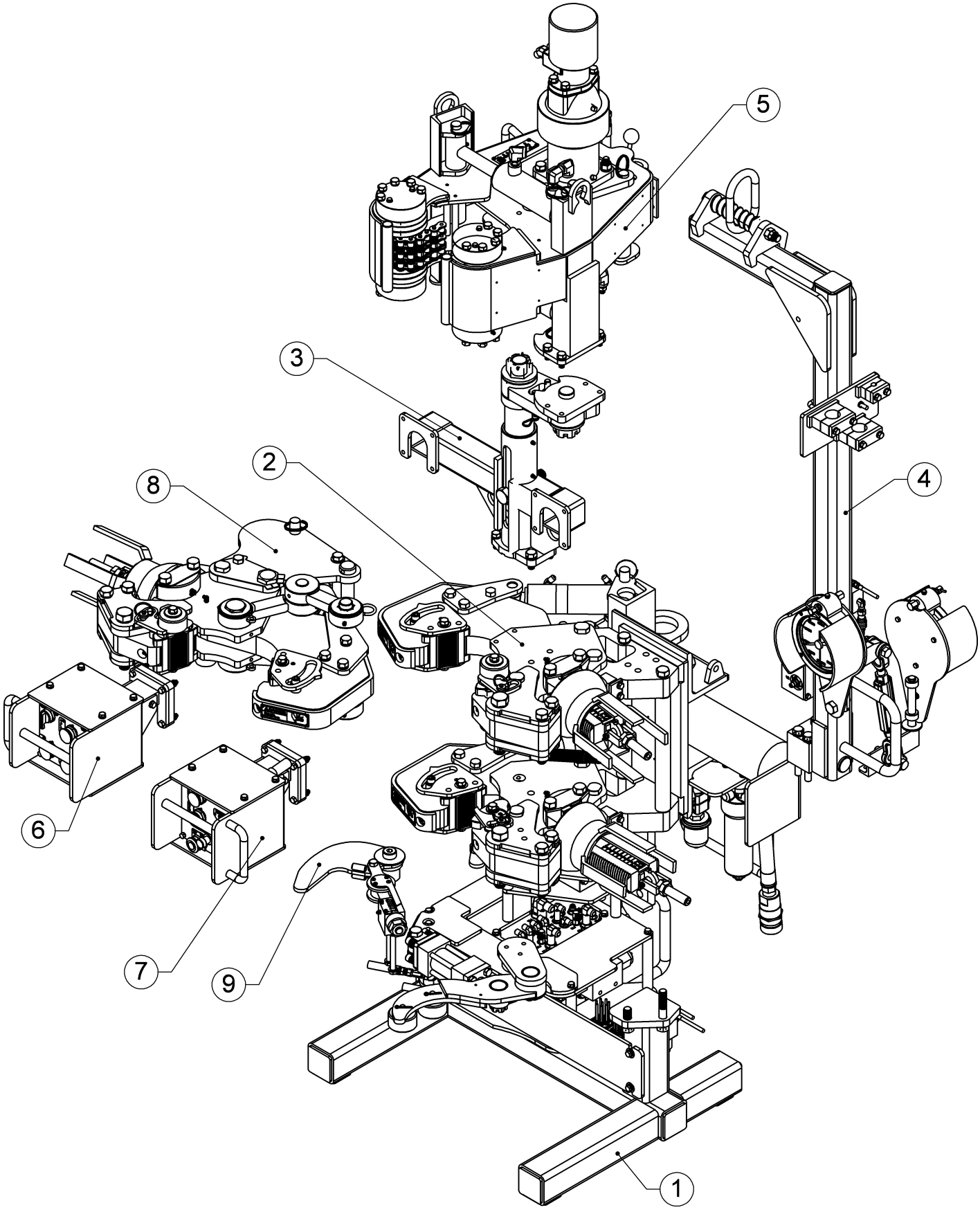
Continued on next page.

Symptom	Remedy
Hydraulic fluid heats up. (cont.)	known, tested hydraulic power unit, set the pump **pressure compensator setting** at **2650 psi**. Use an allen wrench to **rotate** the pressure relief valve **adjustment clockwise until** the **bypass sound** is no longer audible. When the bypass sound **ceases**, **stop rotating** the pressure relief valve **adjustment**. **While holding** the pressure relief valve **adjustment steady** with an allen wrench, **lock in** the **adjustment** by tightening the pressure relief valve lock nut. **Set** the pump **pressure compensator setting** back down to **2600 psi**.
The Raise/Lower Cylinder moves at an undesirerable speed.	• **Adjust** the **metering valves** located on the **main manifold**. • **Check** for any **visual leaks** in the hoses, fittings, cylinder rod head, or cylinder rod wiper seal. Replace if necessary. • There is an **inner seal leak** in the cylinder. **Shut down** the **hydraulic power unit. Push** in **and pull** out **all Grip buttons repeatedly to bleed** all **hydraulic pressure**. **Pull out** all **Grip buttons**. **Disconnect** the **air supply hose to the HawkJaw**. **Disconnect** the **Raise/Lower cylinder Hanger Eye from** the **hanging cable**. **Place** the Raise/Lower cylinder **Rod** side **end on** the **rig floor**. **Connect** the **air supply hose to the HawkJaw**. **Turn on** the **hydraulic power** unit. **Push in** the Lower button, **and hold down** the **Lower button**. While holding down the Lower button, **check** for **Raise/Lower cylinder** piston seal integrity. **Make sure no bodily parts are in the extension path of the cylinder rod.** Slowly **loosen** the **HawkJaw Rod** side Leader **hose**. **Check** for **fluid flow**. **If** there is a piston **seal leak**, fluid will flow with **volume** out of the Rod side leader hose. **Replace** the **seals**. Replace the cylinder if necessary. **Push in** the Raise button, **and hold down** the **Raise button**. While holding down the Raise button, **check** for **Raise/Lower cylinder** piston seals integrity. **Make sure no bodily parts are in the extension path of the cylinder rod.**

Continued on next page.

Symptom	Remedy
The Raise/Lower Cylinder moves at an undesirerable speed. (cont.)	Slowly **loosen** the **HawkJaw Cap** side Leader **hose**. **Check** for **fluid flow**. **If** there is a piston **seal leak**, fluid will flow with **volume** out of the Cap side leader hose. **Replace** the **seals**.

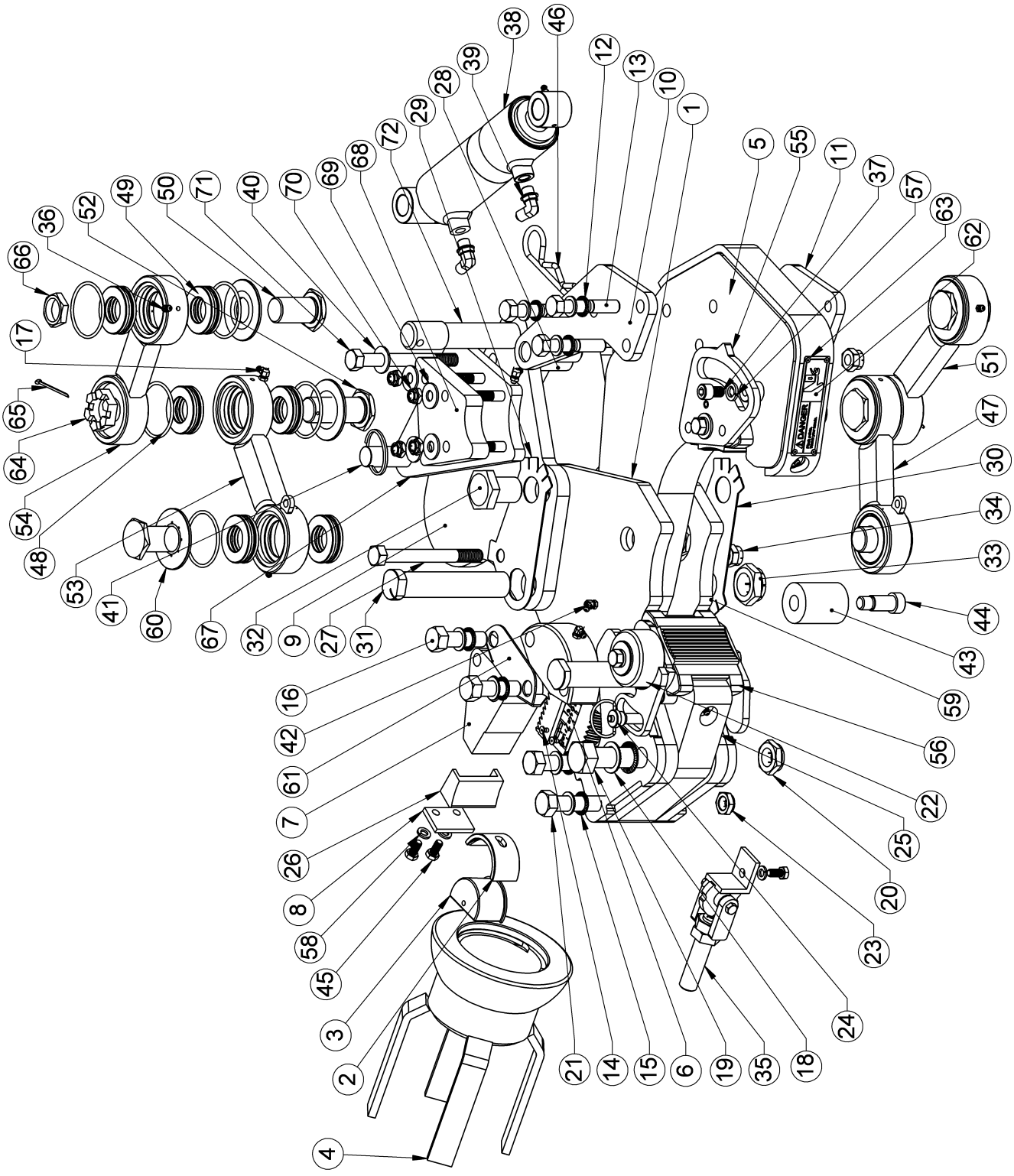
65K-2GJR Full Hawkjaw Jr Assembly



65K-2GJR Full Hawkjaw Jr Assembly

ITEM	QTY.	PART NO./DESCRIPTION	COMMENTS
1	1	65K-2GJR Stand Assy	See Explosion
2	1	65K-2GJR Top-Bottom Wrench Assy	See Explosion
3	1	65K-2GJR Spinner Mount Assy	See Explosion
4	1	65K-2GJR Hanger Assembly	See Explosion
5	1	65K-2GJR Spinner Assy	See Explosion
6	1	65K-2GJR Left Control Handle Assy	See Explosion
7	1	65K-2GJR Right Control Handle Assy	See Explosion
8	1	65K-2GJR Middle Wrench Assy	See Explosion
9	1	65K-2GJR Pipe Stop Assy	See Explosion

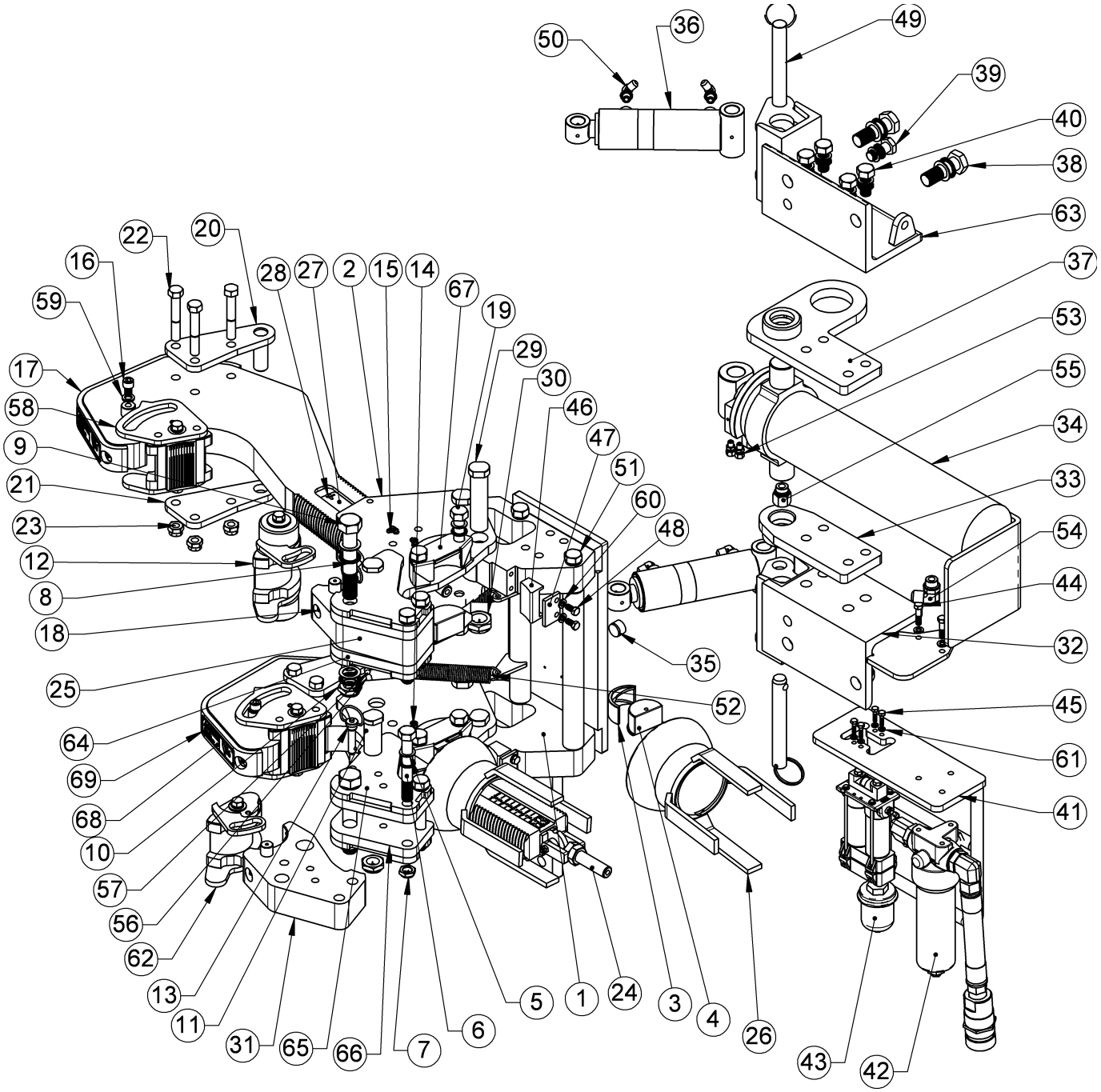
65K-2GJR Middle Wrench Assembly



65K-2GJR Middle Wrench Assembly

ITEM	QTY.	PART NO./DESCRIPTION	COMMENTS
1	1	30004A-2A Jaw Plate Assy	
2	2	30029 Pivot Sleeve	
3	2	30030 Pivot Pin	
4	1	30035 Adjust Nut Assy	
5	1	30002 Hook Assembly	
6	1	30034 Index, Nut	
7	1	30007 Spacer, Nut Retainer	
8	1	30061 Clip, Nut Retainer	
9	2	30009 Torque Arm	
10	1	30013-1 Clevis Plate, Midd. Hook, Pin Assy	
11	1	30013-2 Clevis Plate, Midd. Hook, Thread	
12	3	91074A035 Lock Washer Assy.5.8	
13	3	806442 5.8-11 X 3.50 Lg Hex Bolt	
14	3	807801_ Pop Rivet	
15	7	91074A036 Lock Washer Assembly, 3.4	
16	4	806538-2 3.4-16 X 2.50 Lg Hex Bolt	
17	6	1103K3 Grease Fitting, 90 Degree	
18	1	91074A038 Lock Washer Assembly, 1.0	
19	1	806630_1.00-12 x 6.00lg. Hex Bolt	
20	2	806594-500_1-14 Lock Nut	
21	2	806544_3.4-16 x 5.50 lg. Hex Bolt Grd. 9	
22	1	30056A Shoulder Bolt	
23	2	806523_3.4-16 Flex Nut (31FK1216)	
24	1	92384A092 Push Button Pin	
25	1	30005A-2 Die Pivot Block Assy	
26	1	30055 Nut Retainer	
27	1	806449_5.8-11 x 5.95lg. Hex Bolt	
28	1	30062 Spacer, Middle Wrench	
29	1	30289-1 Lock Plate, Top	
30	1	30289-2 Lock Plate, Btm	
31	1	30114 Bolt, Wrench	
32	2	30116 Bolt, Wrench	
33	1	806646_1.1.4-12 Flex Lock Nut 31FK-2012	
34	2	806414-500_5.8-11 Flex Nut (31FA1011)	
35	1	65K-2GJR Adjust Nut Locking Assembly, JR	See Explosion
36	6	1103K1 Grease Fitting, Straight	
37	1	808413_1.2-13 x .75 lg. Soc. Hd. Cap Screw	
38	1	J26 Grip Cylinder	See Explosion
39	2	2062-6-6S_6MORB x 6MJIC Fitting 90	
40	1	81036 5.8 Flat Washer	
41	1	98404A875_7.625 Lg.Quick Release Pin Assembly	
42	2	1103K2 Grease Fitting, 45 Degree	
43	1	30057 Pipe Stop Roller	
44	1	30063 Bolt, Roller Spindle Modified	
45	3	806004_3.8-16 x .75 Lg. Hex Bolt	
46	1	98335A114 Hair Pin Retainer	
47	1	30038-2MB Link, Wrench Mount Assembly	
48	12	PRP568-230 O Ring	
49	11	146 Thrust Bearing Assembly	
50	4	30043-2 Arm Bolt	
51	1	30042-1 Link, Wrench-Bottom Assembly	
52	2	30043-3 Arm Bolt	
53	1	30038-1MT Link, Wrench Mount Assembly	
54	1	30042-2 Link, Wrench-Top Assembly	
55	1	65K-2GJR Middle Hook Die Holder Assembly	See Explosion
56	1	65K-2GJR Middle Heel Die Holder Assembly	See Explosion
57	1	810703_1.2 Lock Washer	
58	3	810645_3.8 Lock Washer	
59	1	30004A-2B Jaw Plate Assy	
60	6	20029-138AM Washer Assembly	
61	2	30029-1 Pivot Sleeve Keeper	
62	1	SL5 Danger Label	
63	4	807800_ Pop Rivet	
64	2	30420 Castle Nut, Modified	
65	2	807493-250 Cotter Pin	
66	4	30145 Linkage Jam Nut	
67	1	30230-2 Clevis Bumper Wldmnt	
68	1	30230-1 Bumper	
69	4	810705_1.2 Flat Washer	
70	4	806221_1.2-13 Flex Nut	
71	1	806450-1_5.8-11 x 7.00 lg. Hex Bolt Grd. 9	
72	1	30053 Pin, Torque Cyl	

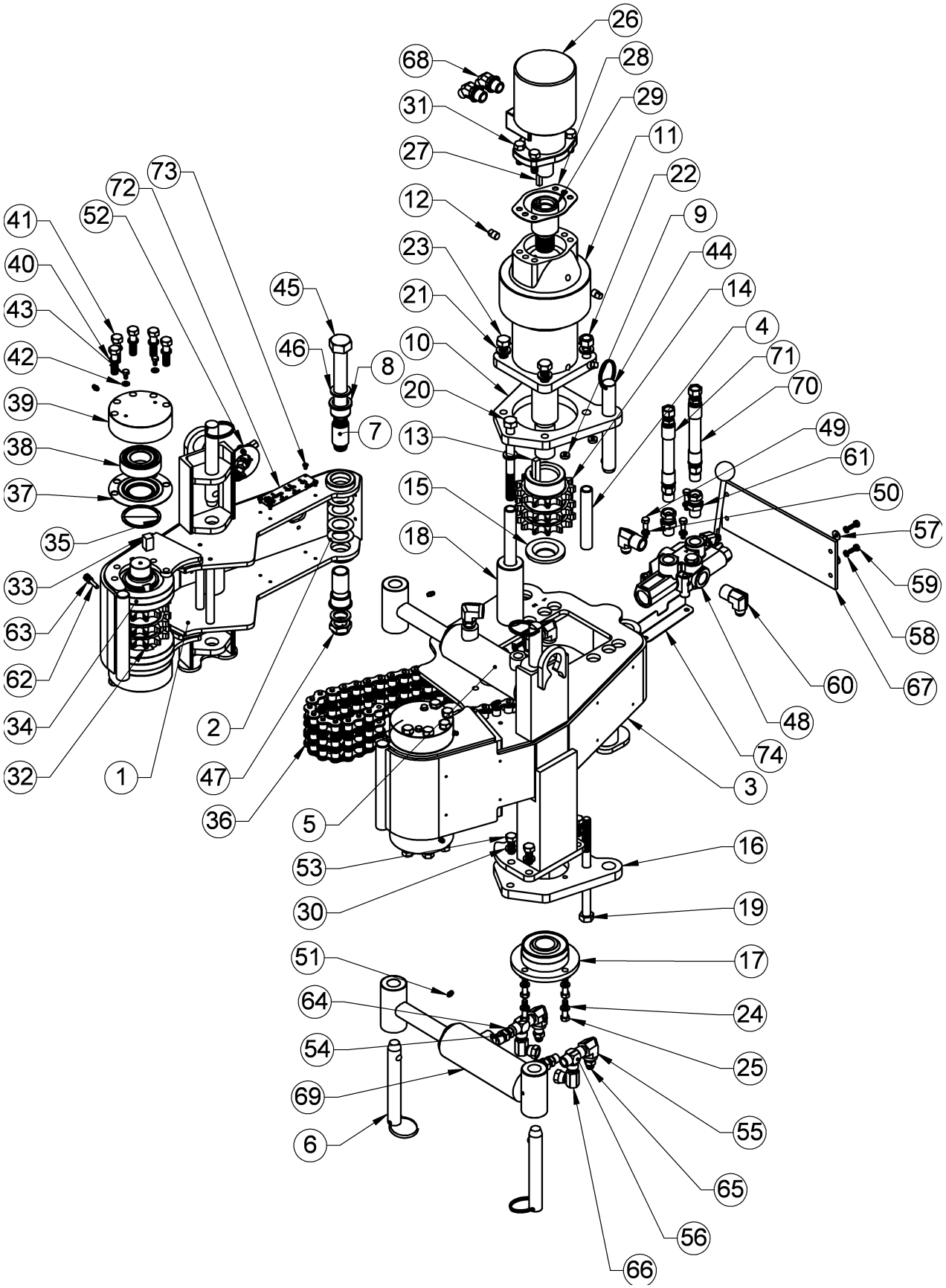
65K-2GJR Top-Bottom Wrench Assembly



65K-2GJR Top-Bottom Wrench Assembly

ITEM	QTY.	PART NO./DESCRIPTION	COMMENTS
1	1	30019 Base Plate Assy	
2	1	30004A-3A Jaw Plate Assy	
3	4	30029 Pivot Sleeve	
4	4	30030 Pivot Pin	
5	25	91074A036 Lock Washer Assembly, 3.4	
6	4	806544_3.4-16 x 5.50 lg. Hex Bolt Grd. 9	
7	4	806523_3.4-16 Flex Nut (31FK1216)	
8	8	91074A038 Lock Washer Assembly, 1.0	
9	2	806630_1.00-12 x 6.00lg. Hex Bolt	
10	4	806594-500_1-14 Lock Nut	
11	2	30056A Shoulder Bolt	
12	1	65K-2GJR Top Heel Die Holder Assembly	See Explosion
13	2	92384A092 Push Button Pin	
14	4	1103K2 Grease Fitting, 45 Degree	
15	4	1103K3 Grease Fitting, 90 Degree	
16	2	808413_1.2-13 x .75 lg. Soc. Hd. Cap Screw	
17	2	30002 Hook Assembly	
18	10	1103K1 Grease Fitting, Straight	
19	8	806538-2 3.4-16 X 2.50 Lg Hex Bolt	
20	2	30014-1 Clevis Plate, Hook Pin Assy	
21	2	30014-2 Clevis Plate, Top-Bottom Hook	
22	6	806453 5.8 X 4.0 Lg Hex Bolt	
23	6	806414-500_5.8-11 Flex Nut (31FA1011)	
24	2	30280 Adjust Nut Locking Assembly, JR	
25	1	30005A-1 Die Pivot Block Assy	
26	2	30035 Adjust Nut Assy	
27	2	30034 Index, Nut	
28	6	807801_ Pop Rivet	
29	4	30115 Bolt, Wrench	
30	4	806646_1.1.4-12 Flex Lock Nut (31FK-2012)	
31	1	30005A-3 Die Pivot Block Assy	
32	1	30027-2 Lower Mount Angle Assembly	
33	1	30017 Bottom Mount, Torque Cyl. Assembly	
34	1	J20 Torque Cylinder Assembly	See Explosion
35	1	30111 Bumper, Torque Cyl.	
36	2	J26 Grip Cylinder	See Explosion
37	1	30016 Top Mount, Torque Cyl. Assembly	
38	4	30118 Angle Bracket Bolt, Large	
39	2	30117 Angle Braket Bolt, Small	
40	8	806529_3.4-16 x 1.75 lg. Hex Bolt Grd. 9	
41	1	30110-1A Filter Bracket Exploded Sub-Assy	
42	1	H25 Hydraulic Filter Assembly	See Explosion
43	1	65K-2GJR A22 On Board Air Filter Assembly	See Explosion
44	3	806025_3.8-16 x 1.50 lg. Hex Bolt	
45	4	805847_1.4-20 x 1.00 lg. Hex Bolt	
46	2	30055 Nut Retainer	
47	2	30061 Clip, Nut Retainer	
48	4	806004_3.8-16 x .75 Lg. Hex Bolt	
49	2	98404A874_5.00lg.Quick Release Pin Assembly	
50	4	2062-6-6S_6MORB x 6MJIC Fitting 90	
51	3	806540_3.4-16 x 3.50 Hex Bolt	
52	2	5682 (Spring 5.36 Lg)	
53	2	2045-2-2S_2MNPT x 2FNPT Fitting Str. Swivel	
54	1	2062-10-10S_10MORB x 10MJIC Fitting 90	
55	1	2216-8-10S 1.2 FNPT X 7.8-14 Adapter	
56	2	808401_3.8-24 X 1 1.2 Soc Set SS Cone Pt	
57	2	808399_3.8-24 X 3.8 Soc Set SS Cone Pt	
58	2	65K-2GJR Top-Bottom Hook Die Holder Assembly	See Explosion
59	2	810703_1.2 Lock Washer	
60	7	810645_3.8 Lock Washer	
61	4	810587_1.4 Lock Washer	
62	1	65K-2GJR Bottom Heel Die Holder Assembly	See Explosion
63	1	30027-1 Upper Mount Angle	
64	1	30004A-3B Jaw Plate Assy	
65	1	30004A-1A Jaw Plate Assy	
66	1	30004A-1B Jaw Plate Assy	
67	4	30029-1 Pivot Sleeve Keeper	
68	2	SL5 Danger Label	
69	8	807800_ Pop Rivet	

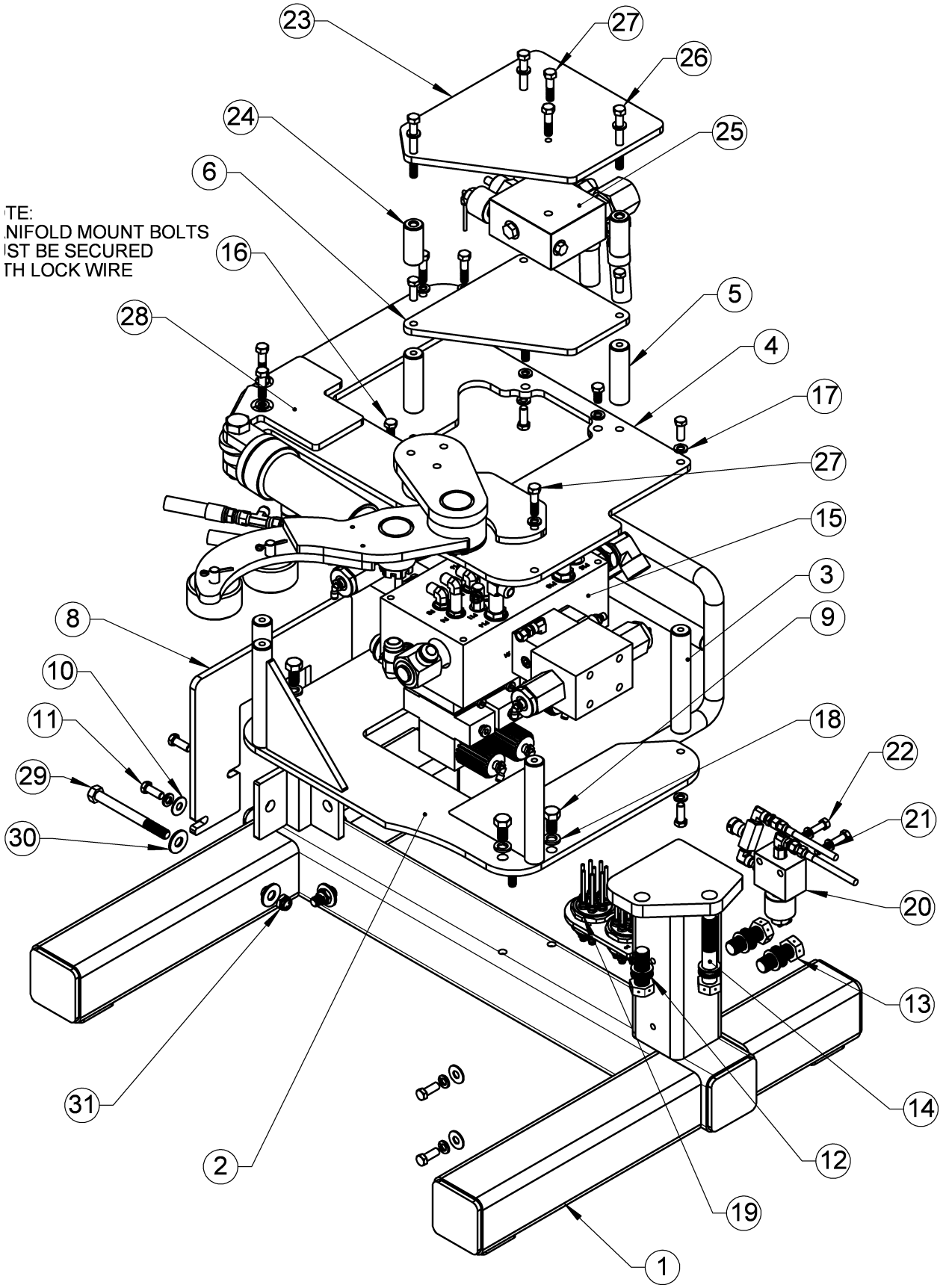
65K-2GJR Spinner Assembly



65K-2GJR Spinner Assembly

ITEM	QTY.	PART NO./DESCRIPTION	COMMENTS
1	1	24703-JR Case, Moving Arm Assembly	
2	4	95601A435 Fiber Washer	
3	1	24710-JR Case, Stationary Arm Assembly	
4	3	24722 Spacer, Gear Box	
5	1	24CYL25-AS Grip Cylinder, Top	See Explosion
6	4	98404A999_1x5 11.16 QK Pin	
7	2	24637 Bushing	
8	2	24729 Flanged Bearing	
9	4	24646 Wear Block	
10	1	24701 Mounting Plate, Gear Box	
11	1	24625 Reducer Assembly	See Explosion
12	3	807603 1.4 NPT Plug Hp	
13	1	24642 Key, Drive Sprocket	
14	1	24641 Drive Sprocket	
15	1	24635 Spacer, Drive Sprocket	
16	1	24702 Mounting Plate, Bearing	
17	1	24656 Flange Bearing, Modified	
18	1	24658 Chain Guard	
19	2	806452_5.8-11 x 9.00 lg. Hex Bolt	
20	1	806450-1_5.8-11 x 7.00 lg. Hex Bolt Grd. 9	
21	5	810732_5.8 Lock Washer	
22	2	806416_5.8-11 Hex Nut	
23	2	806435_5.8-11 x 1.50 lg. Hex Bolt	
24	4	810645_3.8 Lock Washer	
25	4	806025_3.8-16 x 1.50 lg. Hex Bolt	
26	1	ME09 Hydraulic Motor Assembly, Manual	
27	1	M21 Key	
28	1	M22 Motor Mount Gasket	
29	1	R25 Sun Gear Kit	
30	8	810703_1.2 Lock Washer	
31	4	806267_1.2-13 x 1.50lg. Hex Bolt	
32	2	24623 Roller Sprocket	
33	4	24643 Key, Roller	
34	4	24649 Roller	
35	4	RST-275-S Retainer Ring	
36	2	24CHAIN Chain	
37	4	24654 Bearing Seal Assembly	
38	4	24731 Sphere-Rol Bearing	
39	4	24622 Bearing Cap	
40	20	91074A033 Lock Washer Assembly, 1.2	
41	20	806373_1.2-20 x 2.00 lg.Hex Bolt Grd. 9	
42	8	811150_#14 Brass Washer	
43	8	805834_1.4-20 x .50 lg. Hex Bolt	
44	2	98404A878 Quick Release Pin	
45	1	91268A935_1.0-8 x 9.50 lg. Hex Bolt	
46	2	91074A038 Lock Washer Assembly, 1.0	
47	1	806580_1.0-8 Lock Nut	
48	1	DV Spinner Motor Valve Assembly, JR	See Explosion
49	3	805920 5.16-18 x 1.5 Bolt	
50	3	810616_5.16 Lock Washer	
51	9	1103K1 Grease Fitting, Straight	
52	1	25726 Chain Oiler Assy	See Explosion
53	4	806251_1.2-13 x 1.25 Hex Bolt	
54	4	2081-8-6S 1.2 X 3.8 HP Hex Bushing	
55	5	2089-6-6S_6MNPT x 6FNPT Fitting 90 Elbow	
56	2	2090-6-6S NPT 3.8 Tee Elbow	
57	4	810589_1.4 Flat Washer	
58	5	810587_1.4 Lock Washer	
59	4	805842_1.4-20 x .75 lg. Hex Bolt	
60	2	2024-12-8S 12 MNPT X 8MJIC 90 Drg	
61	2	2046-8-8S 1.2 HS Swivel Coupling FXF	
62	1	805867 1.4-20 X 1 1.2 Hex Tap SS	
63	1	805780 1.4-20 Hex Nut SS	
64	2	2083-6-6S 3.8 Hex Nipple	
65	2	2021-6-6S 6MNPTX6MJIC Fitting Str	
66	2	2047-6-6S 3.8 HP 90 Drg ST EL HS SWIL FXM	
67	1	24723 Rubber Cover	
68	2	2061-10-8S_10MORB x 8MJIC Fitting 45	
69	1	24CYL25-BS Grip Cylinder, Bottom	See Explosion
70	1	JHOS-2-54_-8FJICx1.2MNPT Hose33.00 Lg. Hose	
71	1	JHOS-1-53_-8FJICx1.2MNPT Hose33.00 Lg. Hose	
72	1	30142 Pipe Adjust Position Label	
73	4	807801_ Pop Rivet	
74	1	30421 Label, Bracket	

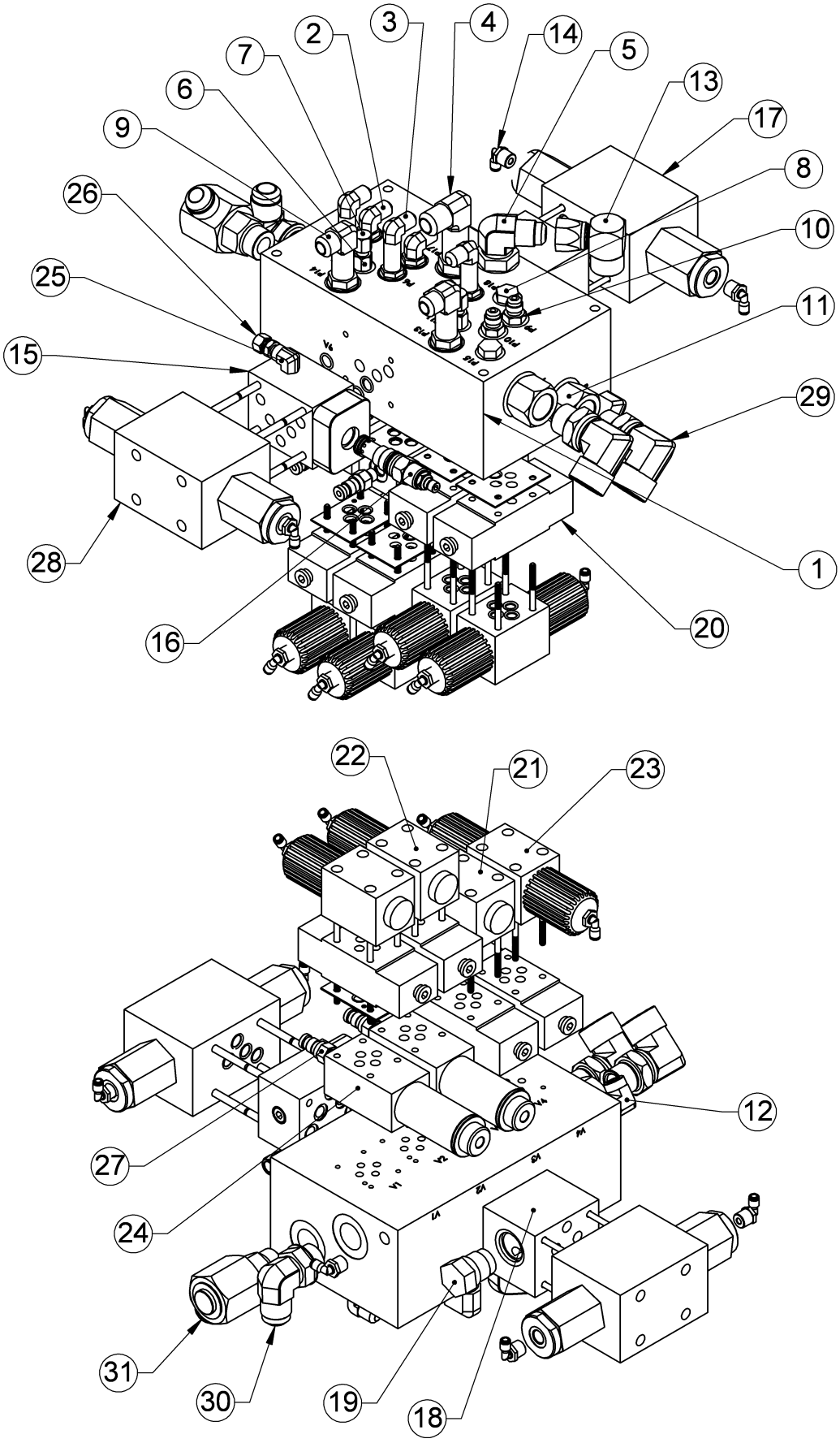
65K-2GJR Stand Assembly



65K-2GJR Stand Assembly

ITEM	QTY.	PART NO./DESCRIPTION	COMMENTS
1	1	30025 Stand Weldment Sub-Assy	
2	1	30099-2 Valve Housing, Bottom Assembly	
3	3	30103-624 Valve Cover Spacer	
4	1	30100 Valve Housing, Top	
5	3	30103-350 Valve Cover Spacer	
6	1	30098 Hose Cover	
7	1	30059-1 Right Guard, Stand	
8	1	30059-2 Left Guard, Stand	
9	4	806246_1.2-13 x 1.00 Hex Bolt Grd. 9	
10	4	810648_3.8 Flat Washer	
11	14	806012 3.8-16 X 1.0 Lg Hex Bolt	
12	4	91074A036 Lock Washer Assembly, 3.4	
13	3	806538_3.4-16 x 2.00 lg.D Hex Bolt Grd. 9	
14	1	806541D_3.4-16 x 4.00 Lg. Hex Bolt Grd. 9	
15	1	65K-2GJR Main Manifold Assembly	See Explosion
16	4	806004_3.8-16 x .75 Lg. Hex Bolt	
17	24	810645_3.8 Lock Washer	
18	4	810703_1.2 Lock Washer	
19	1	65K-2GJR Air Pilot Assy	See Explosion
20	1	65K-2GJR Oiler Block Assy	See Explosion
21	2	810616_5.16 Lock Washer	
22	2	805922_5.16-18 x 2.0 Hex Bolt	
23	1	30098-1 Open_Closed Center Manifold Plate	Optional
24	3	30103-231 Spacer	
25	1	65K-2GJR Open_Closed Center Manifold	Optional
26	4	806051_3.8-16 x 3.50lg. Hex Bolt	
27	7	806025_3.8-16 x 1.50 lg. Hex Bolt	
28	1	30008-40 Hydraulic Pipe Clamp Assembly	See Explosion
29	2	806313_1.2-13 x 5.00 lg. Hex Bolt Grd.9	
30	4	810705_1.2 Flat Washer	
31	2	806221_1.2-13 Flex Nut	

65K-2GJR Main Manifold Assembly



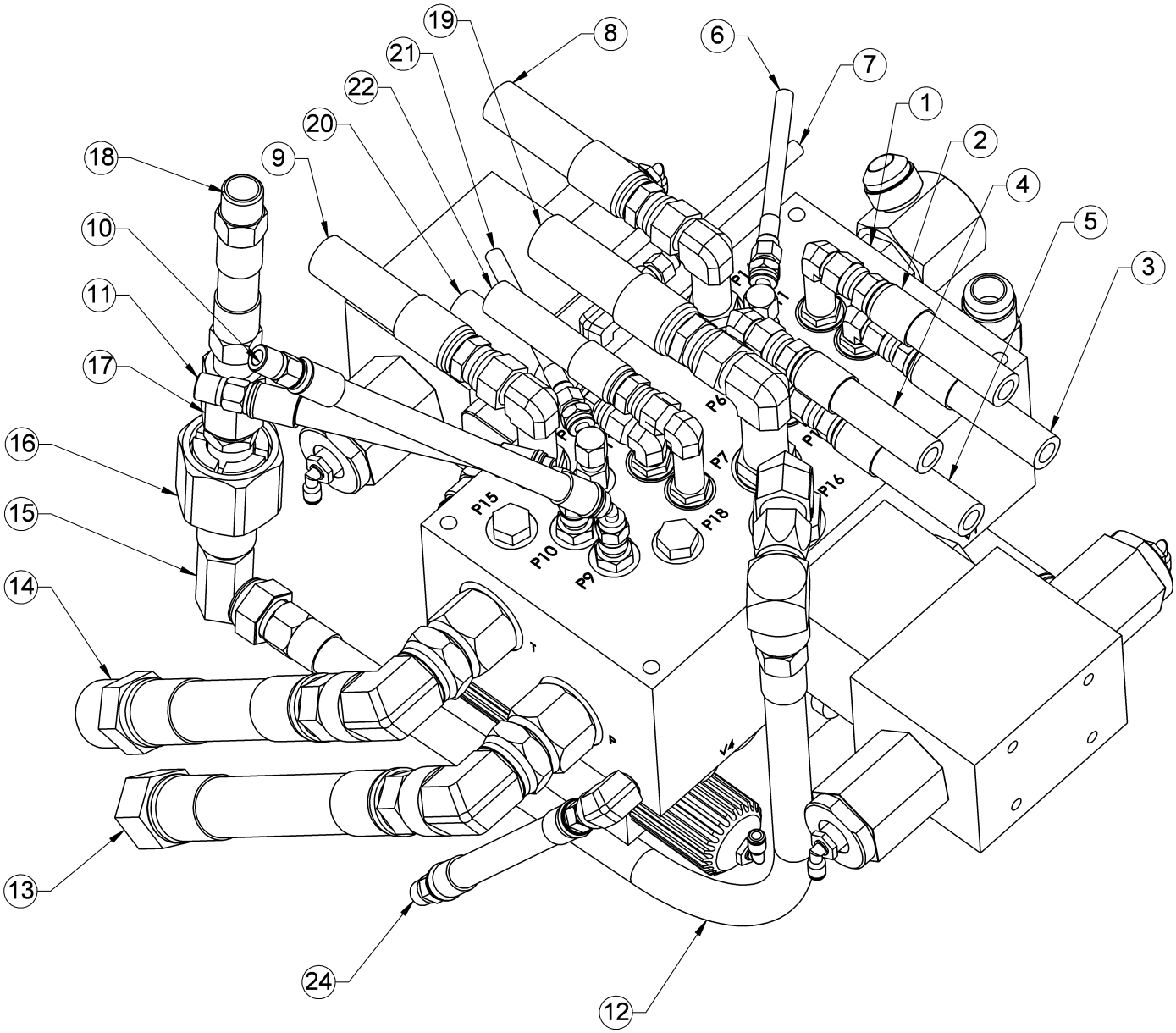
65K-2GJR Main Manifold Assembly

ITEM	QTY.	PART NO./DESCRIPTION	COMMENTS
1	1	J1 Main Manifold, JR	
2	3	2062-6-6S_6MORB x 6MJIC Fitting 90	
3	3	206209-6-6S_6MORB x 6MJIC Fitting 90 Ext.	
4	1	206209-10-10S_10MORB x 10MJIC Fitting 90 Ext.	
5	1	2062-12-8S_12MORB x 8MJIC Fitting 90	
6	2	2216-2-4S_-4MORB x-4FNPT Str. Adaptor	
7	2	2047-2-2S 2MNPTX2FNPT Fitting 90 Drg Swivel	
8	2	900598-6S_MORB Plug	
9	2	206209-8-8S_8MORB x 8MJIC Fitting 90 Ext.	
10	3	20202702-6-4S_-6MORB x -4MJIC Str. Adaptor	
11	2	2216-12-12S 3.4 MORBX3.4 FJIC	
12	1	2089-4-4S 1.4 St Elbow	
13	1	2244-8-10S 1.2 FNPT X 10FJIC Adapt 90 Drg	
14	10	A25 5.32 x 1.4 PTC Elbow	
15	1	V6-1 Manifold Relief Valve Block Assy	
16	1	V6B Relive Valve	
17	1	H14_Torque Valve Assembly	
18	1	V5C Manifold Relief Valve Block	
19	1	H4D Port Plug	
20	5	H6 Flow Control Sandwich Assembly	
21	1	H9JR 3Grip Valve	
22	2	H9JR 1&2 Grip Valve	
23	1	H5 Directional Valve Assembly	
24	2	H6PRM2_Pressure Control Sandwich	
25	1	2089-2-2S 1.8 Straight 90 Drg Elbow	
26	1	2045-2-2S_2MNPT x 2FNPT Fitting Str. Swivel	
27	2	H71 1.4 QK Disconnect Male	
28	1	H15_Spin Valve Assembly	
29	2	2252-12-12S 3.4 HP Swivel 90 Drg	
30	1	2062-12-12S_12MORB x 12MJIC Fitting 90	
31	1	FS55021 Swivel Fitting	

VALVE ADJUSTMENT

FUNCTION	PORT	PRESSURE/ADJUSTMENT
BOTTOM GRIP	V1	**PRESSURE** PRESET TO 1000PSI; SCREW IN FOR HIGHER PRESSURE, OUT FOR LOWER PRESSURE **FLOW CONTROL VALVE**; SCREW OUT FOR MORE FLOW, IN FOR LESS FLOW
MIDDLE GRIP	V2	**PRESSURE** PRESET TO 1000PSI; SCREW IN FOR HIGHER PRESSURE, OUT FOR LOWER PRESSURE **FLOW CONTROL VALVE**; SCREW OUT FOR MORE FLOW, IN FOR LESS FLOW
TOP GRIP	V3	**FLOW CONTROL VALVE**; SCREW OUT FOR MORE FLOW, IN FOR LESS FLOW
RAISE/LOWER CYL	V4	**FLOW CONTROL VALVE**; SCREW OUT FOR MORE FLOW, IN FOR LESS FLOW

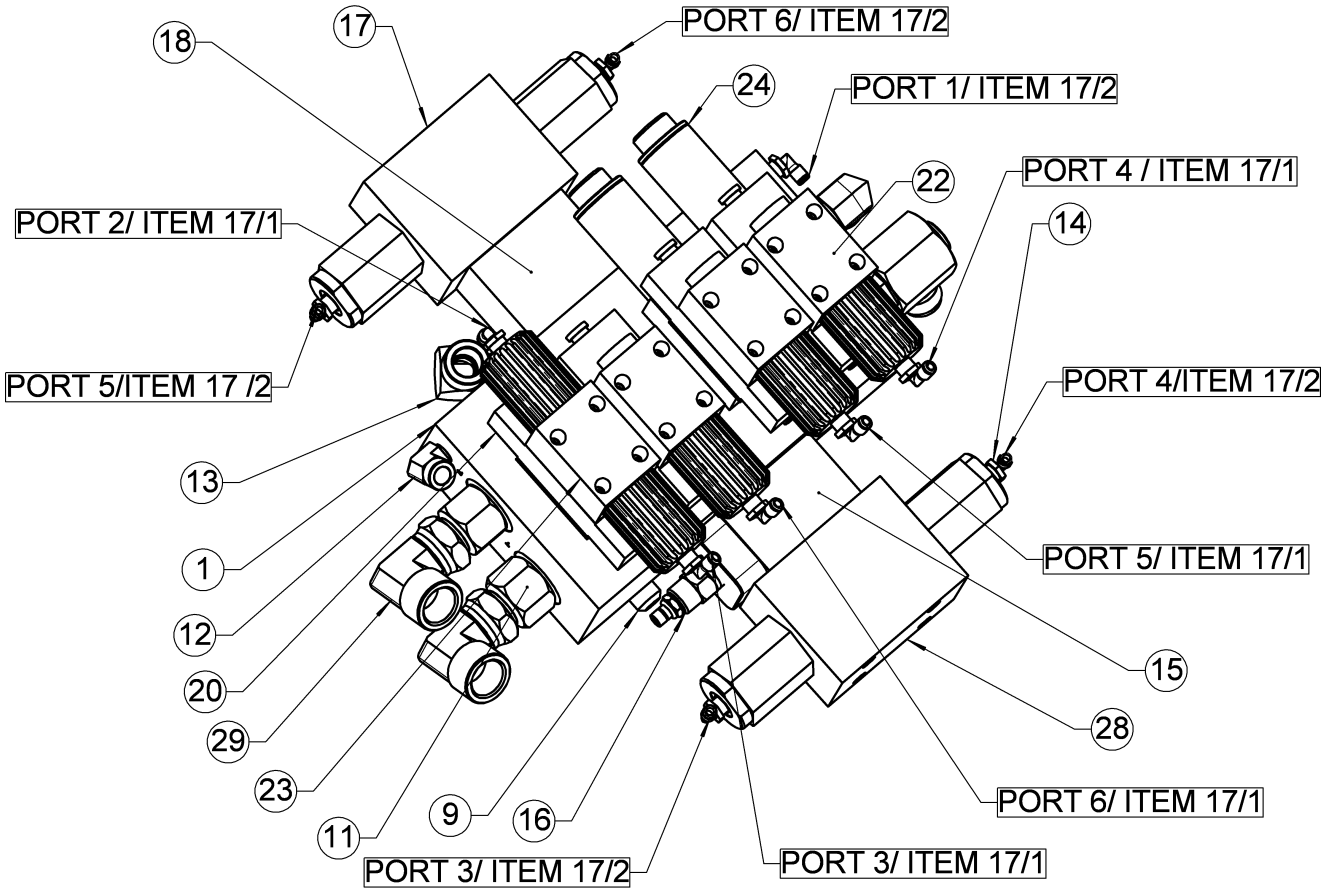
65K-2GJR Hydraulic Connections

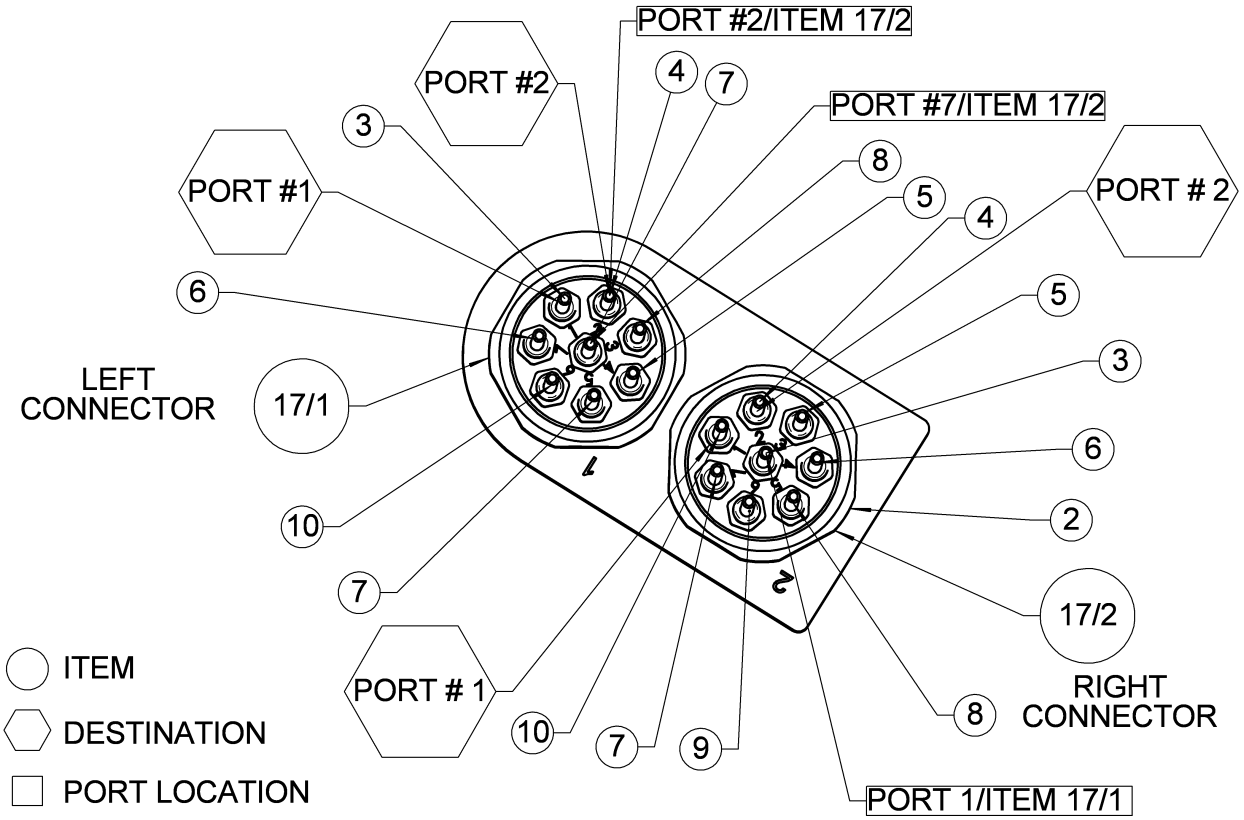


65K-2GJR Hydraulic Connections

ITEM	QTY.	PART NO./DESCRIPTION	PORT	DESTINATION	COMMENTS
1	1	65K-2GJR Main Manifold Assembly			See Explosion
2	1	JHOS-11-16 6FJICx-6FJICx19.00lg. Hose	P4	Btm. Grip Cyl. Rod Side	
3	1	JHOS-12-15 6FJICx-6FJICx19.00lg. Hose	P3	Btm. Grip Cyl. Cap Side	
4	1	JHOS-9-18 6FJICx-6FJICx41.00lg. Hose	P6	Mid. Grip Cyl. Rod Side	
5	1	JHOS-10-17 6FJICx-6FJICx35.00lg. Hose	P5	Mid. Grip Cyl. Cap Side	
6	1	JHOS-23-44 1.8MNPTx1.8MNPTx20lg_1.8 Hose	P11	Low Torque Tank Line	
7	1	JHOS-27-36 1.8MNPTx1.8MNPTx28lg_1.8 Hose	PG	Needle Valve, Oiler Block	See Explosion
8	1	JHOS-25-39_-8FJICx-8FJICx60 Lg. Hose	P14	Spin Block SP2	
9	1	JHOS-26-40_-8FJICx-8FJICx60 Lg. Hose	P13	Spin Block SP1	
10	1	JHOS-21-47 1.4MNPTx-4FJIC45Drgx 96.00 Lg Hose	P9	End R/L Cyl. Cap Side Leader	
11	1	JHOS-22-48 1.4MNPTx-4FJIC45Drgx 96.00 Lg Hose			
12	1	JHOS-13-57 1.2 MNPT x 1.2 MNPTx 21.0lg.-8Hyd. Hose	P16	Torque Cyl. Swivel Assy	
13	1	HOS-2J 3.4MNPTx-12FJICx40.00lg_-12 Hose	PORT P	Pressure Line Power Unit	
14	1	JHOS-50-52 3.4MNPTx-1 MNPTx180.00lg_-12 Hose	PORT T		
15	1	2047-8-8S_1.2 MNPT x 1.2 FNPT Fitting 90 Swivel			
16	1	FS59004 Swivel Joint			
17	1	2096-8S 1.2 HP Coupling			
18	1	JHOS-31-57 1.2 MNPT x 1.2 MNPTx 10.0lg.-8Hyd. Hose	P16 SWIVEL	Torque Cyl. Rod Side	
19	1	JHOS-14-30 10FJICx-10FJICx73.00lg. Hose	P17	Torque Ctrl Block PR2	
20	1	JHOS-7-20 6FJICx-6FJICx70.00lg. Hose	P8	Top Grip Cyl. Rod Side	
21	1	HOS-30 1.8MNPTx1.8MNPTx73lg_1.8 Hose	P11	Torque Ctrl Block 'Tank'	
22	1	JHOS-8-19 6FJICx-6FJICx70.00lg. Hose	P7	Top Grip Cyl. Cap Side	
24	1	JHOS-AIRIN -4 MNPT X -4 MNPT -4 Hose X 180 Lg	MAIN MAN.	Main Air Supply	

65K-2GJR Main Manifold Air Connections





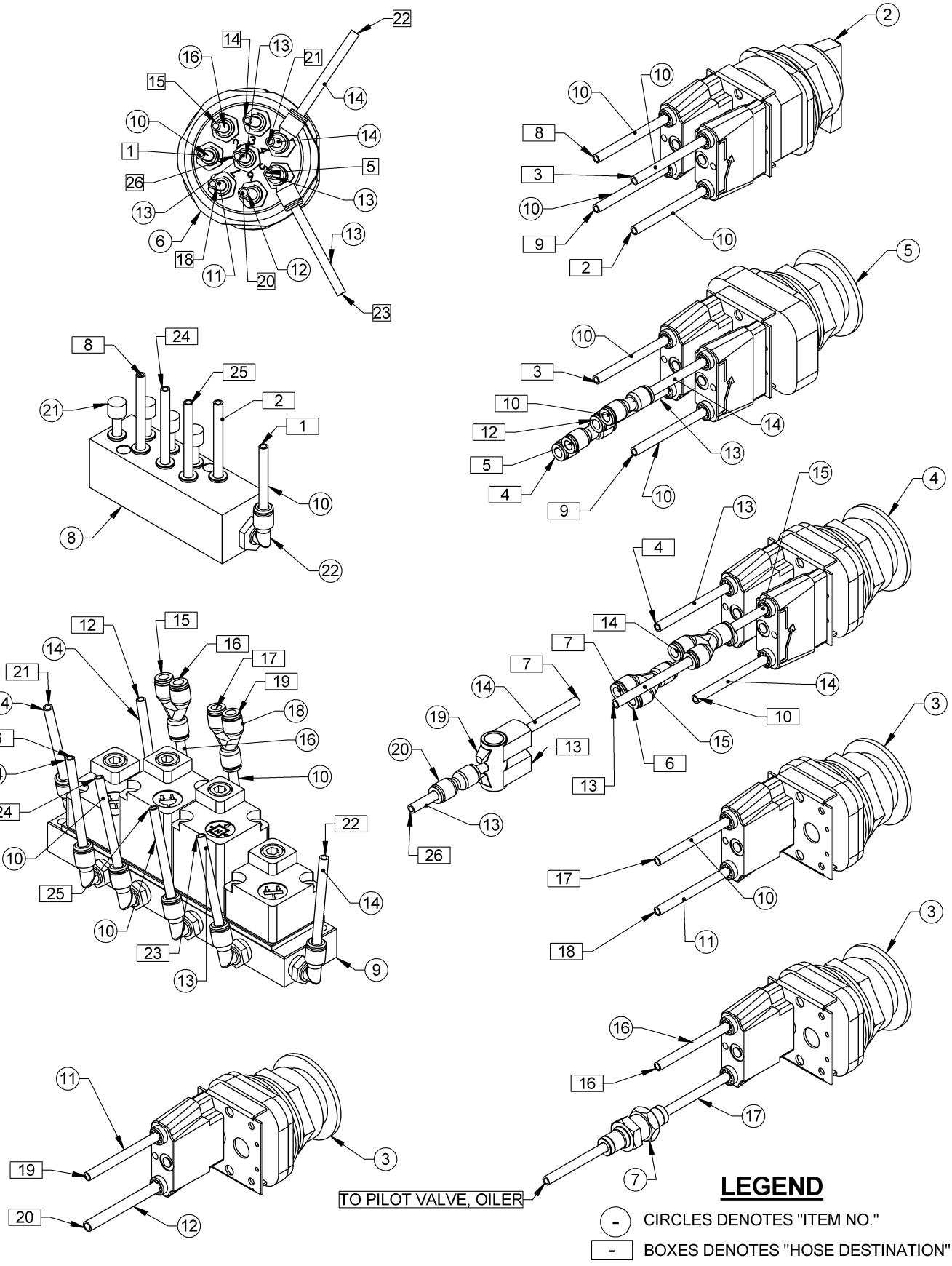
65K-2GJR Main Manifold Air Connections

ITEM	QTY.	PART NO./DESCRIPTION	COMMENTS
1	1	J1 Main Manifold, JR	
2	3	2062-6-6S_6MORB x 6MJIC Fitting 90	
3	3	206209-6-6S_6MORB x 6MJIC Fitting 90 Ext.	
4	1	206209-10-10S_10MORB x 10MJIC Fitting 90 Ext.	
5	1	2062-12-8S_12MORB x 8MJIC Fitting 90	
6	2	2216-2-4S_-4MORB x-4FNPT Str. Adaptor	
7	2	2047-2-2S 2MNPTX2FNPT Fitting 90 Drg Swivel	
8	2	900598-6S_MORB Plug	
9	2	206209-8-8S_8MORB x 8MJIC Fitting 90 Ext.	
10	3	20202702-6-4S_-6MORB x -4MJIC Str. Adaptor	
11	2	2216-12-12S 3.4 MORBX3.4 FJIC	
12	1	2089-4-4S 1.4 St Elbow	
13	1	2244-8-10S 1.2 FNPT X 10FJIC Adapt 90 Drg	
14	10	A25 5.32 x 1.4 PTC Elbow	
15	1	V6-1 Manifold Relief Valve Block Assy	
16	1	V6B Relive Valve	
17	1	H14_Torque Valve Assembly	
18	1	V5C Manifold Relief Valve Block	
19	1	H4D Port Plug	
20	5	H6 Flow Control Sandwich Assembly	
21	1	H9JR 3Grip Valve	
22	2	H9JR 1&2 Grip Valve	
23	1	H5 Directional Valve Assembly	
24	2	H6PRM2_Pressure Control Sandwich	
25	1	2089-2-2S 1.8 Straight 90 Drg Elbow	
26	1	2045-2-2S_2MNPT x 2FNPT Fitting Str. Swivel	
27	2	H71 1.4 QK Disconnect Male	
28	1	H15_Spin Valve Assembly	
29	2	2252-12-12S 3.4 HP Swivel 90 Drg	
30	1	2062-12-12S_12MORB x 12MJIC Fitting 90	
31	1	FS55021 Swivel Fitting	

Connectors 1 & 2

ITEM	QTY.	PART NO./DESCRIPTION	COMMENTS
1	1	30096 Connector Bracket	
2	2	A10A L & R Coupler Assy	
3	2	A40-5 Red Air Hose	
4	2	A40-4 Clear Air Hose	
5	2	A40-2 Orange Air Hose	
6	2	A40-7 Green Air Hose	
7	3	A40-1 Yellow Air Hose	
8	2	A40-3 Blue Air Hose	
9	1	A40-8 Gray Air Hose	
10	2	A40-6 Black Air Hose	

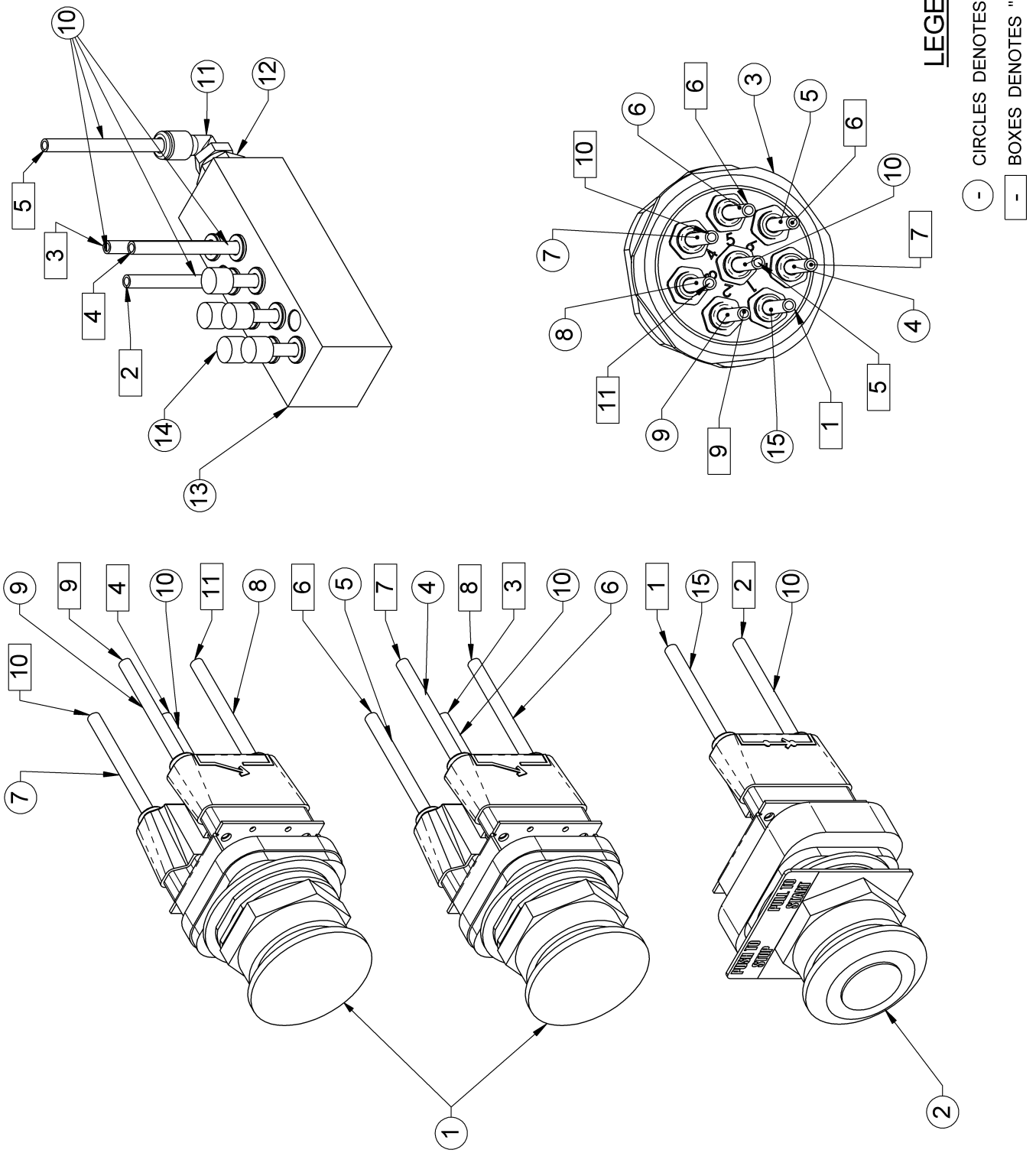
65K-2GJR Panel, Left Control Handle Assembly



65K-2GJR Panel, Left Control Handle Assembly

ITEM NO.	QTY./ASSY.	PART NO./DESCRIPTION	COMMENTS
1	1	30078 Left Control Handle Plate Assembly	
2	1	A1 Selector Switch Assembly	
3	3	A3 Button Air Valve Assembly	
4	1	A4G Grip Valve Assembly	
5	1	A8GH Grip Hold Button Assy	
6	1	A50L-A Left Control Handle Coupler Assy	
7	1	A53 5.32 Str Union Fitting	
8	1	A15 Air Manifold Assembly	
9	1	59063-2GSR_Logic Manifold Assembly	
10	17	A40-5 Red Air Hose	
11	2	A40-7 Green Air Hose	
12	2	A40L-4_3.16 Black Air Hose	
13	7	A40-1 Yellow Air Hose	
14	10	A40-2 Orange Air Hose	
15	3	A40-3 Blue Air Hose	
16	3	A40-4 Clear Air Hose	
17	2	A40-8 Gray Air Hose	
18	6	A52 Y PTC Fitting	
19	1	J37 'Or' Element Connector	
20	1	A53 PTC Coupler Fitting	
21	4	A36 Port Plug	
22	1	A25 5.32 x 1.4 PTC Elbow	

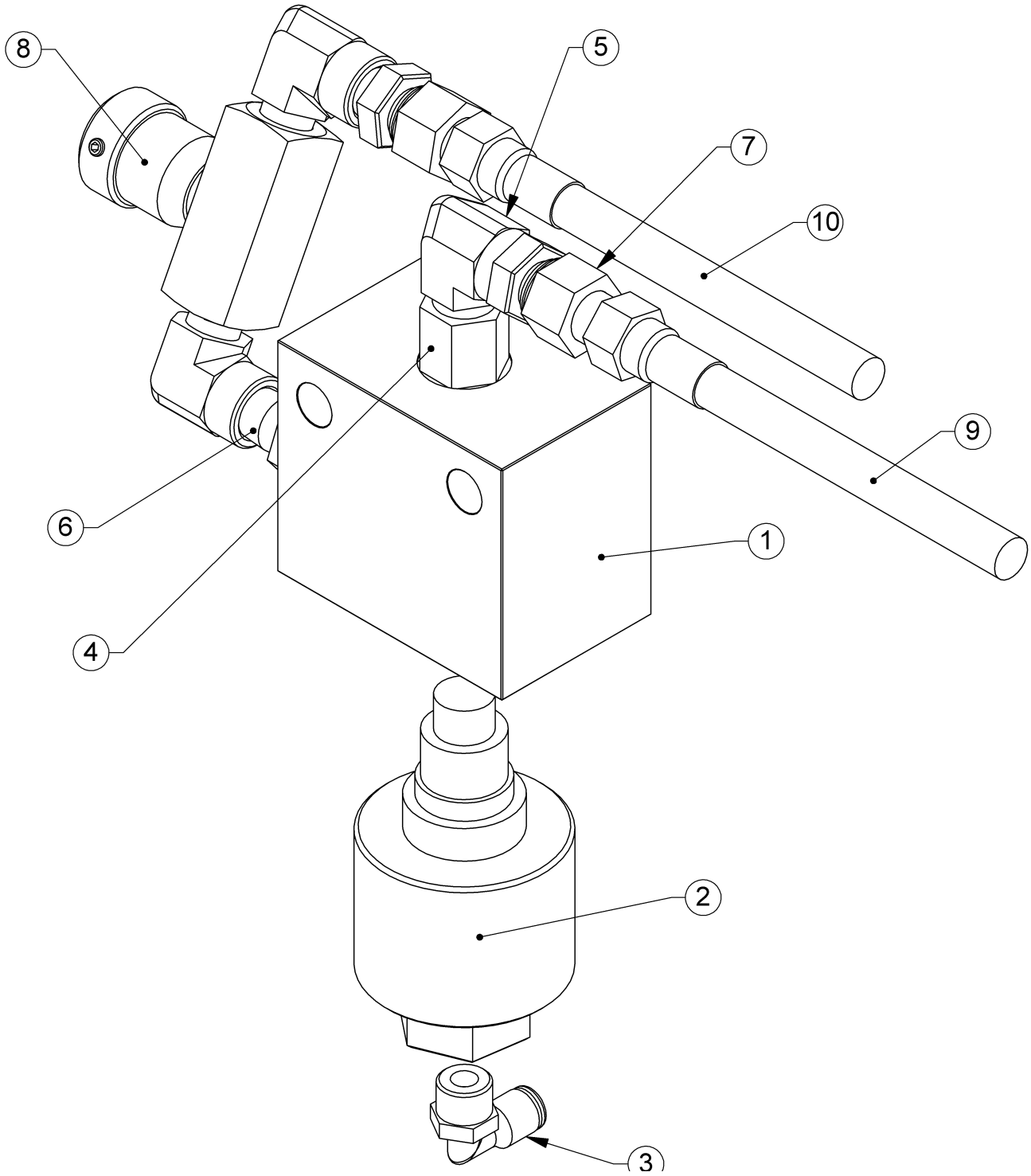
65K-2GJR Panel, Right Control Handle Assembly



65K-2GJR Panel, Right Control Handle Assembly

ITEM	QTY.	PART NO./DESCRIPTION	COMMENTS
1	2	A20 Button Air Valve Assembly	
2	1	A80 'E' Stop Button Assy	
3	1	A51R-A Right Control Handle Coupler Assy	See Explosion
4	2	A40-1 Yellow Air Hose	
5	2	A40-8 Gray Air Hose	
6	2	A40-3 Blue Air Hose	
7	2	A40-7 Green Air Hose	
8	2	A40-2 Orange Air Hose	
9	2	A40-4 Clear Air Hose	
10	8	A40-5 Red Air Hose	
11	1	A46 5.32 x 1.8 PTC Elbow	
12	1	2081-4-2S 1.4 x 1.8 H.P. Hex Bushing	
13	1	A15 Air Manifold	
14	5	A36 Port Plug	
15	2	A40-6 Black Air Hose	

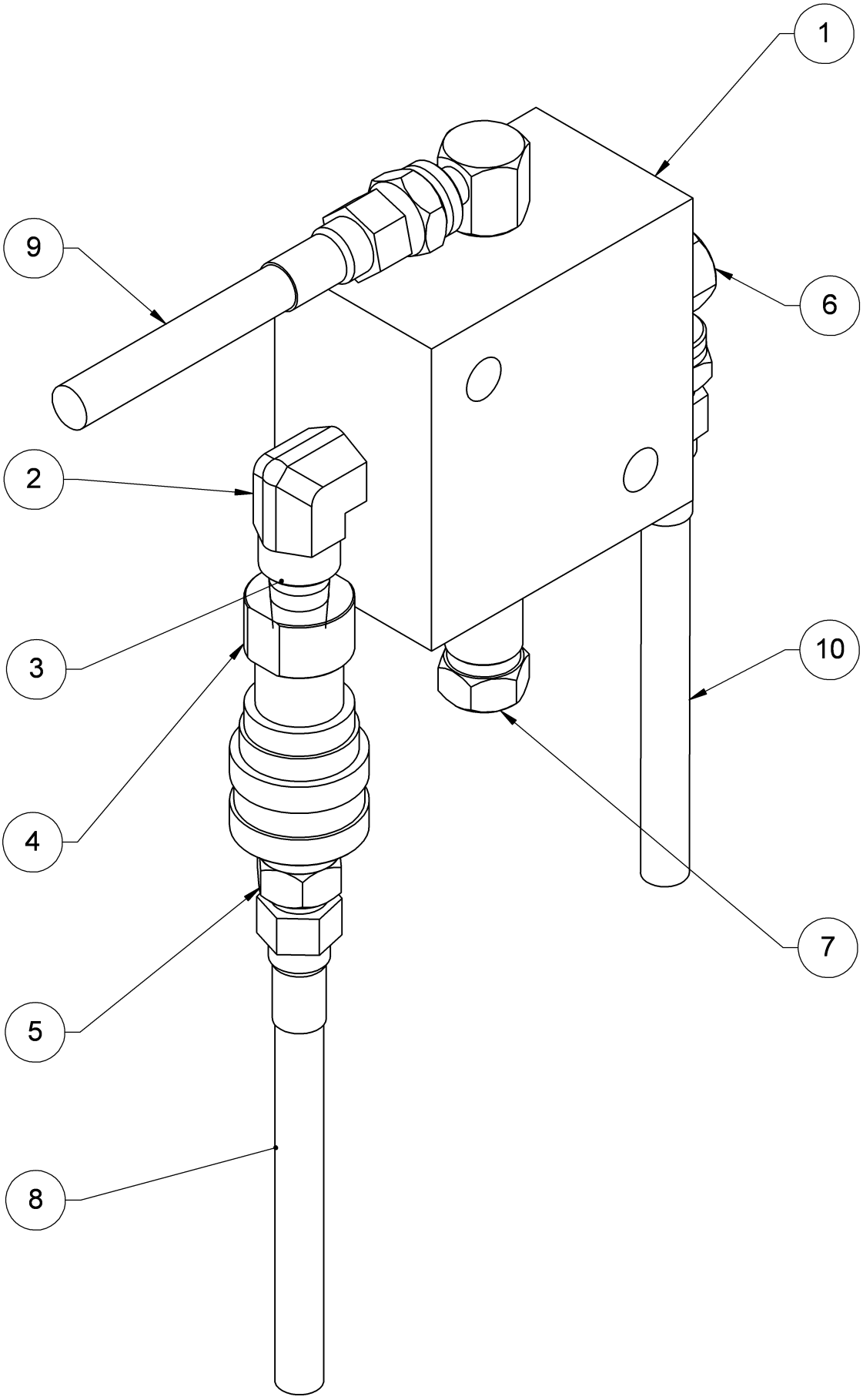
65K-2GJR Oiler Block Assembly



65K-2GJR Oiler Block Assembly

ITEM	QTY	PART NO./DESCRIPTION	HOSE DESTINATION	COMMENTS
1	1	WFN Oiler Block		
2	1	H4B Air Piloted 2-Way Valve		
3	1	A46 5.32 x 1.8 PTC Elbow		
4	2	2216-2-4S_-4MORB x-4FNPT Str. Adaptor		
5	3	2089-2-2S 1.8 Straight 90 Drg Elbow		
6	1	805221 1.8 Closed Nipple HP		
7	2	2045-2-2S_2MNPT x 2FNPT Fitting Str. Swivel		
8	1	N200S Needle Valve		
9	1	JHOS-OIL 1.8MNPTx1.8MNPTx83lg_1.8 Hose	Chain Oiler Nozzle	
10	1	JHOS-27-36 1.8MNPTx1.8MNPTx28lg_1.8 Hose	V6-1 Valve, Main Man.	

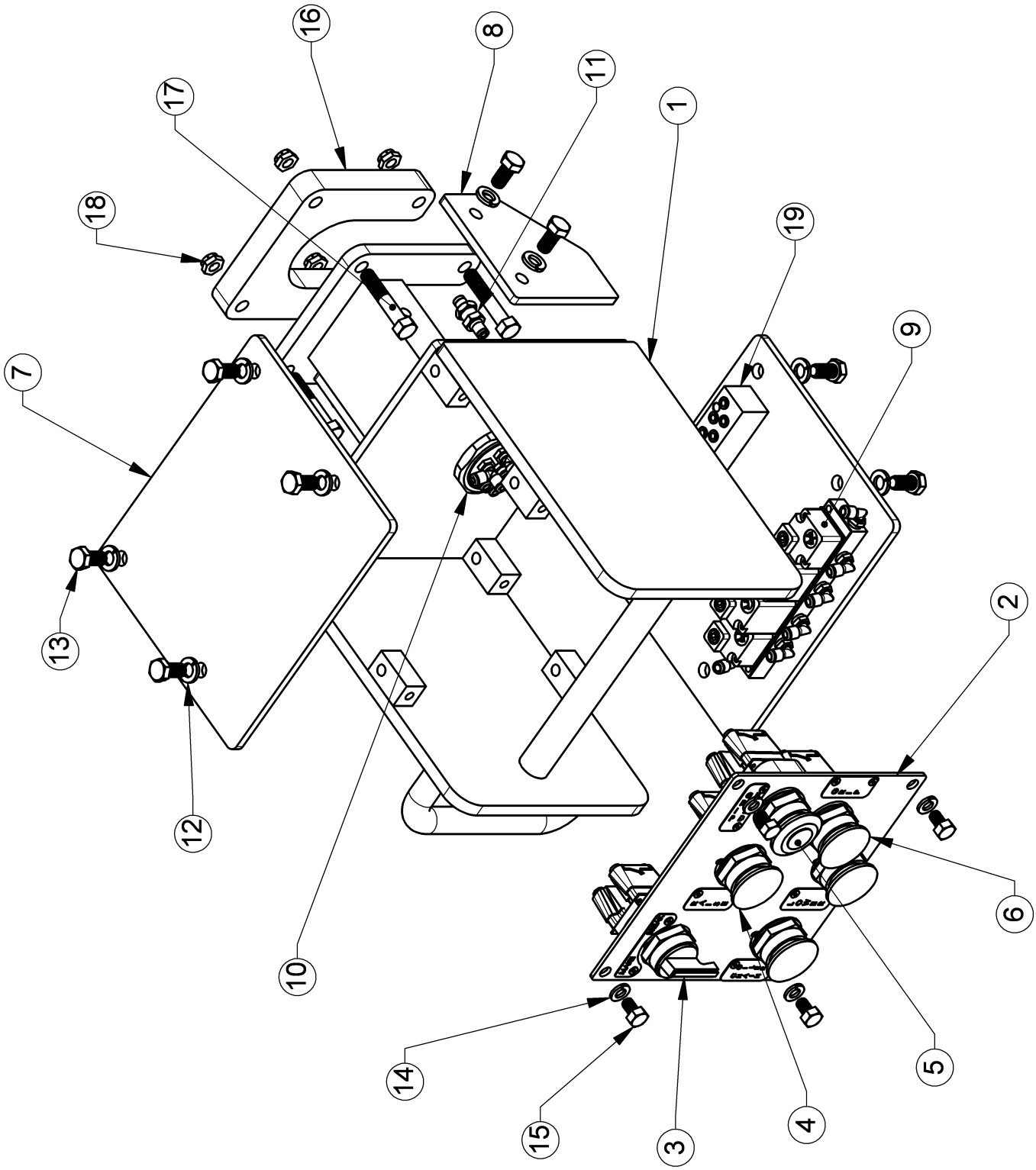
65K-2GJR Torque Gage Manifold



65K-2GJR Torque Gage Manifold

ITEM	QTY.	PART NO./DESCRIPTION	DESTINATION	COMMENTS
1	1	20275 Gage Manifold		
2	1	2089-2-2S 1.8 Straight 90 Drg Elbow		
3	1	805221 1.8 Closed Nipple HP		
4	1	H40F Socket Quick Disconect 1.8		
5	1	H40M Plug Quick Disconect 1.8		
6	2	2047-2-2S 2MNPTX2FNPT Fitting 90 Drg Swivel		
7	1	2082-4S Pipe Plug		
8	1	HOS-30 1.8MNPTx1.8MNPTx73lg_1.8 Hose	Low-Torque Warning	See Explosion, Trq. Cyl.
9	1	HOS-32_1.8MNPTx1.8MNPTx17lg_1.8 Hose	Gage	
10	1	HOS-18_1.8MNPTx1.8MNPTx54lg_1.8 Hose	Torque Block	See Explosion

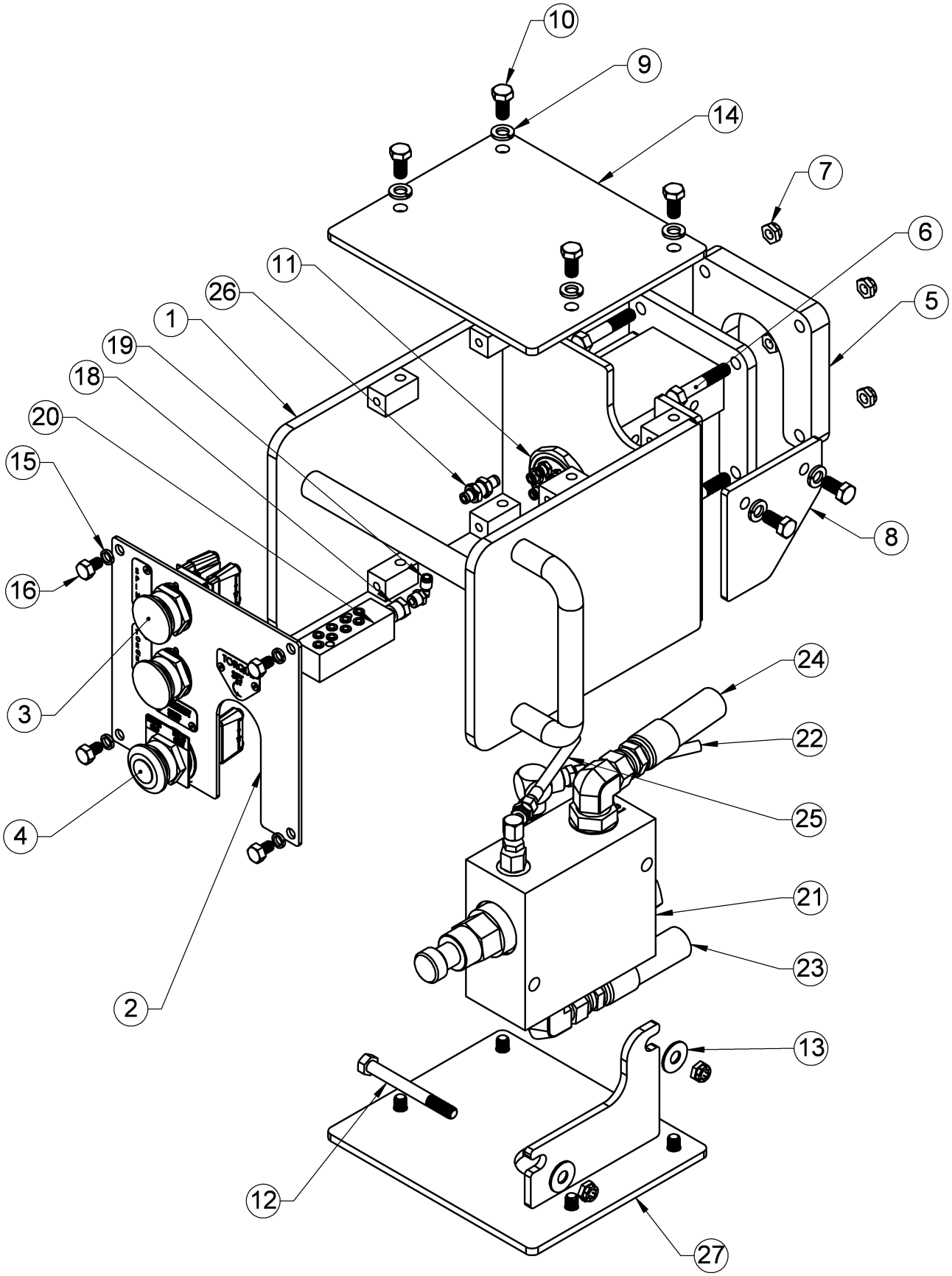
65K-2GJR Left Control HandleAssembly



65K-2GJR Left Control HandleAssembly

ITEM	QTY.	PART NO./DESCRIPTION	COMMENTS
1	1	30077L Left Control Handle Assembly	
2	1	30078 Left Control Handle Plate Assembly	
3	1	A1 Selector Switch Assembly	
4	3	A3 Button Air Valve Assembly	
5	1	A8GH Grip Hold Button Assy	
6	1	A4G Grip Valve Assembly	
7	2	30081-1 Cover, Control Handle	
8	2	20247 Guard, Air Connector	
9	1	59063-2GSR_Logic Manifold Assembly	
10	1	A50L-A Left Control Handle Coupler Assy	See Explosion
11	1	A53 5.32 Str Union Fitting	
12	12	810645_3.8 Lock Washer	
13	12	806004_3.8-16 x .75 Lg. Hex Bolt	
14	4	810616_5.16 Lock Washer	
15	4	805916_5.16-18 x .50 LG. HEX BOLT	
16	1	20117A Rubber Shock Mount	
17	4	806041_3.8-16 x 2.00 lg. Hex Bolt Grd. 5	
18	4	805987-750 3.8-16 Flex Nut (21FKF616)	
19	1	A15 Air Manifold Assembly	

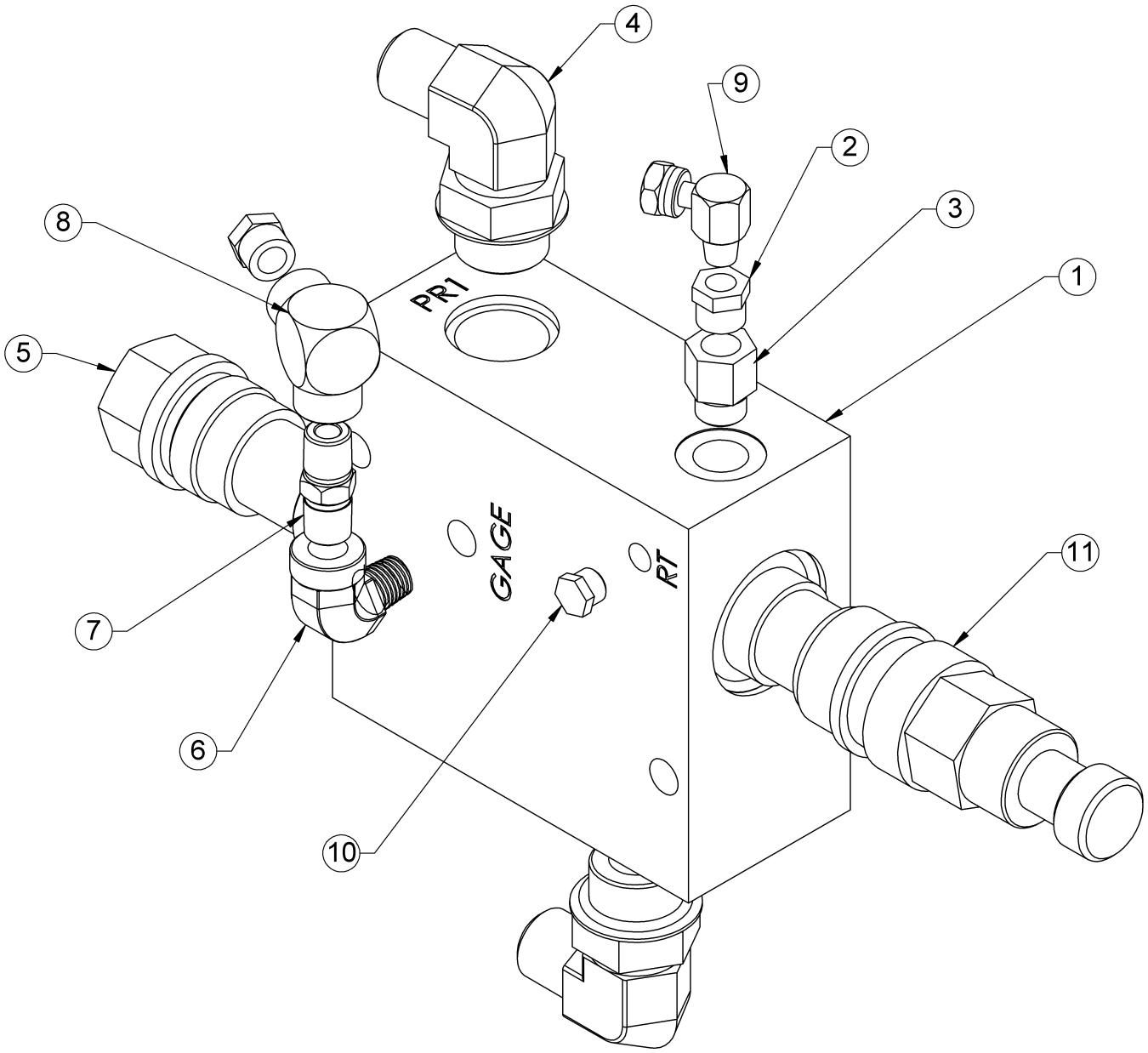
65K-2GJR Right Control HandleAssembly



65K-2GJR Right Control HandleAssembly

ITEM	QTY.	PART NO./DESCRIPTION	DESTINATION	COMMENTS
1	1	30077R Right Control Handle Assembly		
2	1	30079A Right Control Panel Assembly		
3	2	A20 Button Air Valve Assembly		
4	1	A80 'E' Stop Button Assy		
5	1	20117A Rubber Shock Mount		
6	4	806041_3.8-16 x 2.00 lg. Hex Bolt Grd. 5		
7	6	805987-750 3.8-16 Flex Nut (21FKF616)		
8	2	20247 Guard, Air Connector		
9	12	810645_3.8 Lock Washer		
10	12	806004_3.8-16 x .75 Lg. Hex Bolt		
11	1	A51R-A Right Control Handle Coupler Assy		See Explosion
12	2	806051_3.8-16 x 3.50lg. Hex Bolt		
13	2	810648_3.8 Flat Washer		
14	1	30081-1 Cover, Control Handle		
15	4	810616-1 Lock Washer, 5.16 Hi Collar		
16	4	805916_5.16-18 x .50 lg. Hex Bolt		
18	1	2081-4-2S 1.4 x 1.8 H.P. Hex Bushing		
19	1	A46 5.32 x 1.8 PTC Elbow		
20	1	A15 Air Manifold		
21	1	65K-2JGR Torque Control Block Assembly		See Explosion
22	1	HOS-18_1.8MNPTx1.8MNPTx54lg_1.8 Hose	Gage Man.	See Explosion
23	1	JHOS-14-30 10FJICx-10FJICx73.00lg. Hose	Port P17, Main Man.	See Explosion
24	1	JHOS-29-32 10FJICx-10FJICx55.00Lg. Hose	Trq. Cyl, Piston	See Explosion
25	1	HOS-30 1.8MNPTx1.8MNPTx73lg_1.8 Hose	Port P11, Main Man.	See Explosion
26	1	A53 5.32 Str Union Fitting		
27	1	30081-3 Cover, Right Control Handle		

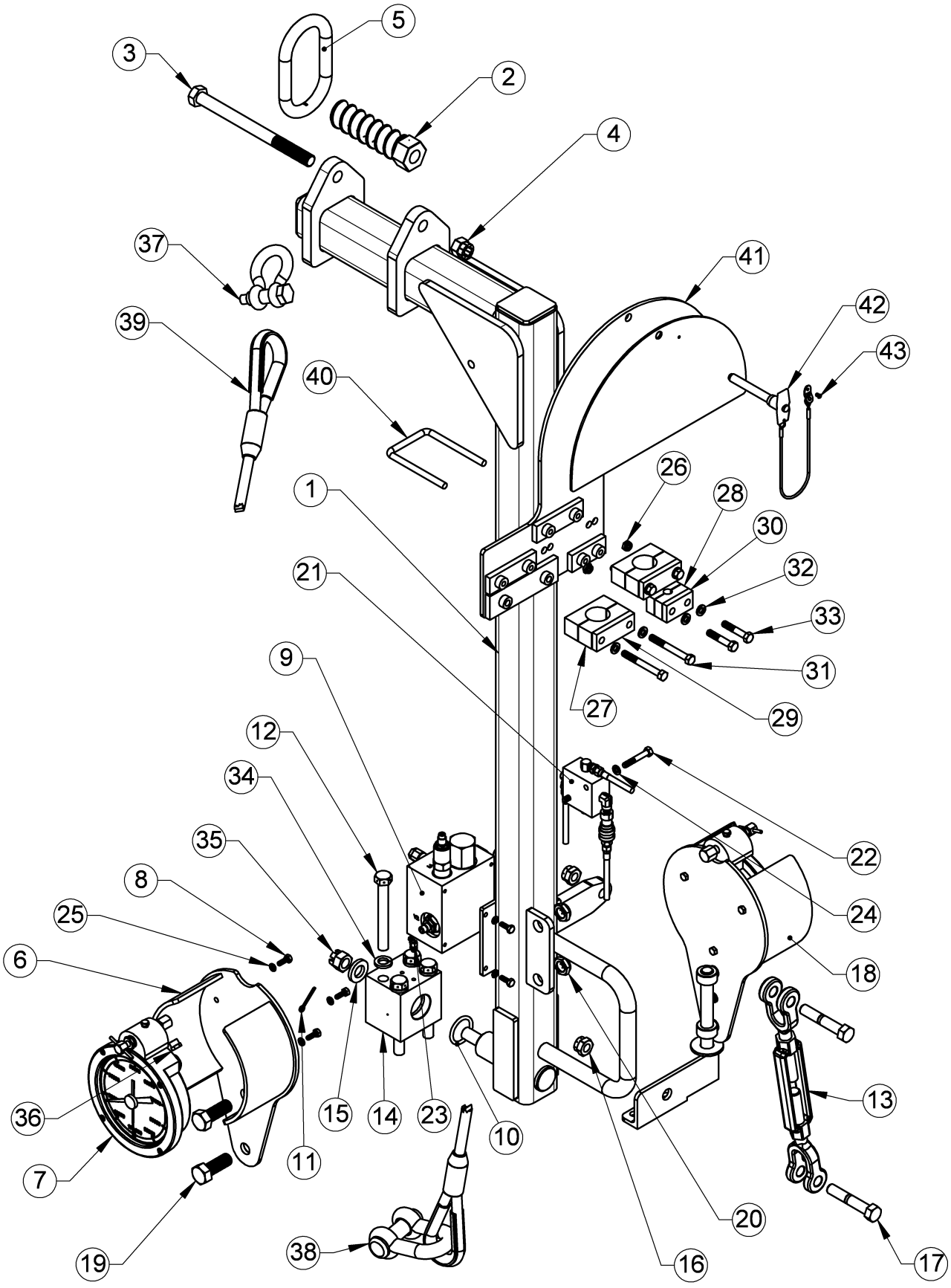
65K-2GJR Torque Control Block Assembly



65K-2GJR Torque Control Block Assembly

ITEM	QTY.	PART NO./DESCRIPTION	COMMENTS
1	1	20222 Torque Control Block, Modification	
2	2	2081-4-2S 1.4 x 1.8 H.P. Hex Bushing	
3	1	2216-4-6S_-6MORB x-4FNPT Str. Adaptor	
4	2	2062-12-10S_12MORB x 10MJIC Fitting 90	
5	1	CXGD-XBN Check Valve	
6	1	30113 Orifice Fitting	
7	1	2083-4-4S x 3.8 Lg 1.4 Hex Nipple, Hydraulic	
8	1	2087-4-4S 1.4 HP 90 Drg Elbow FXF	
9	1	2047-2-2S 2MNPTX2FNPT Fitting 90 Drg Swivel	
10	1	2082-2S_1.8 Pipe Plug	
11	1	J55A Torque Control Valve Assembly	

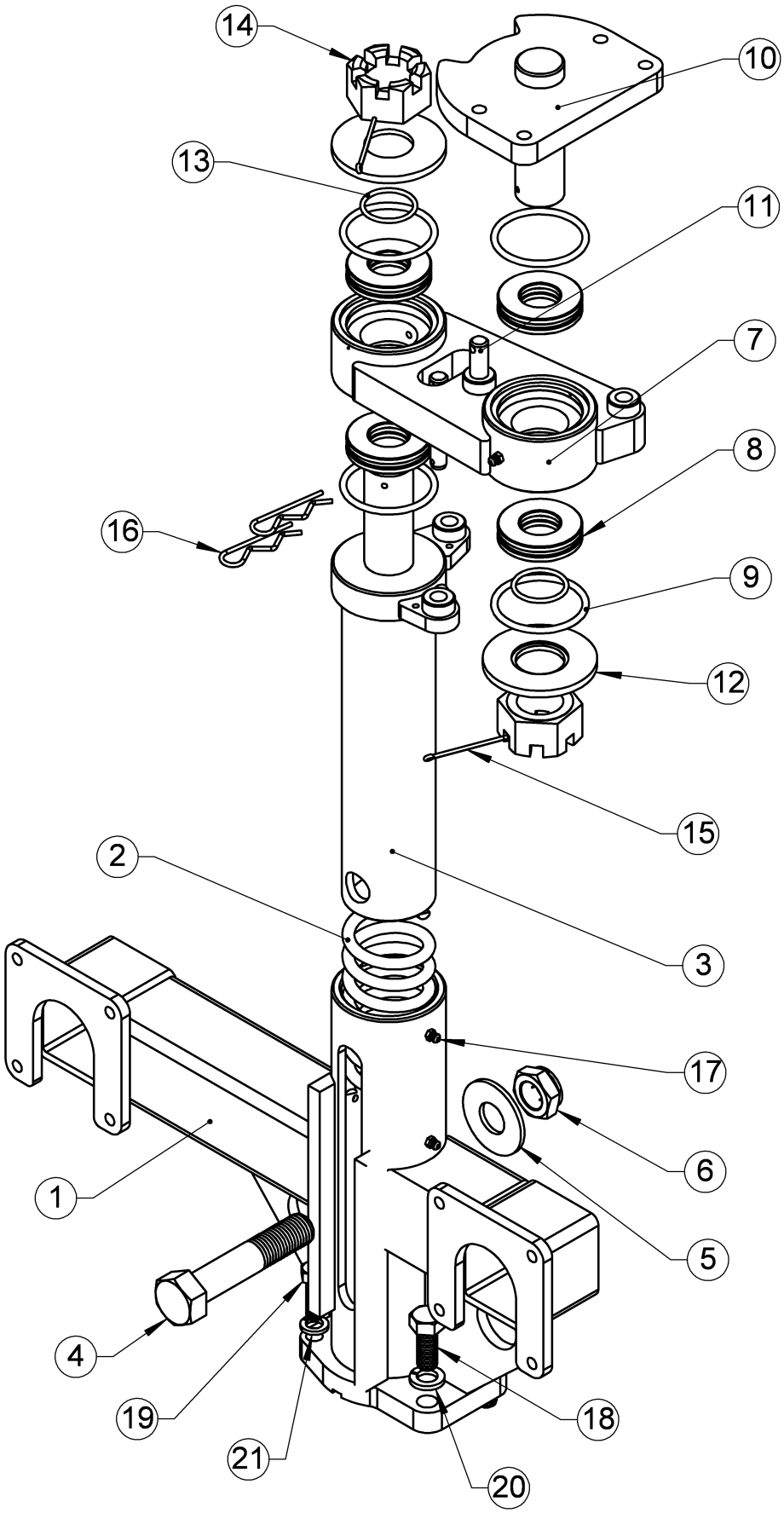
65K-2GJR Hanger Assembly



65K-2GJR Hanger Assembly

ITEM	QTY.	PART NO./DESCRIPTION	COMMENTS
1	1	30048 Hanger Assembly	
2	1	13179-2 Adjust Screw	
3	1	806510_3.4-10 x 9.50 Hex Bolt	
4	1	806503_3.4-10 Flex Nut (31FAF1210)	
5	1	13143 Suspension Ring	
6	1	20180 Gage Housing Assembly	
7	1	J25 Torque Gauge	
8	7	805842_1.4-20 x .75 lg. Hex Bolt	
9	1	65K-2GJR J2 Spinner Manifold	See Explosion
10	1	PRP-568-325 O Ring	
11	1	807493-125 Cotter Pin SST	
12	4	806484-1 5.8-18 X 5 Lg Hex Bolt	
13	1	3022T56 Turnbuckle Jr	
14	1	30045 Hanger Pivot Block	
15	1	98025A036 Washer, Extra Thick	
16	2	806414-500_5.8-11 Flex Nut (31FA1011)	
17	2	806442 5.8-11 X 3.50 Lg Hex Bolt	
18	1	30300 Remote Gage Assembly	Optional Equipment
19	2	806511_3.4-10 x 2.00 lg. Hex Bolt Grd. 9	
20	2	806503-1_3.4-10 Flex Nut (31FKF1210)	
21	1	65K-2GJR Manifold, Torque Gage	See Explosion
22	2	805922_5.16-18 x 2.0 Hex Bolt	
23	1	1103K2 Grease Fitting, 45 Degree	
24	2	810616_5.16 Lock Washer	
25	7	810587_1.4 Lock Washer	
26	2	805987-750 3.8-16 Flex Nut (21FKF616)	
27	4	SH5150PP 1_1.2 Hoseclamp (tube)	
28	2	SH30540PP 1.4 Hose Clamp (pipe)	
29	2	H5150-1 Bracket, Hose Clamp	
30	1	H30540-1 Bracket, Hose Clamp	
31	4	806049_3.8-16 x 3.25lg. Hex Bolt	
32	6	810645_3.8 Lock Washer	
33	2	806042_3.8-16 x 2.00lg. Hex Bolt	
34	4	810732_5.8 Lock Washer	
35	1	806496_3.4-16 x 13.16 Castle Nut	
36	1	2081-4-2S 1.4 x 1.8 H.P. Hex Bushing	
37	1	G209 Shackle	
38	1	G215-7.8 Shackle	
39	1	SC74 Safety Cable	
40	1	806703 3_8 x 3in U-Bolt	
41	1	20267 Hose Mount, 2GSR Assembly	
42	1	93750A715 Push-Button Pin w Cable	
43	1	807800_ Pop Rivet	

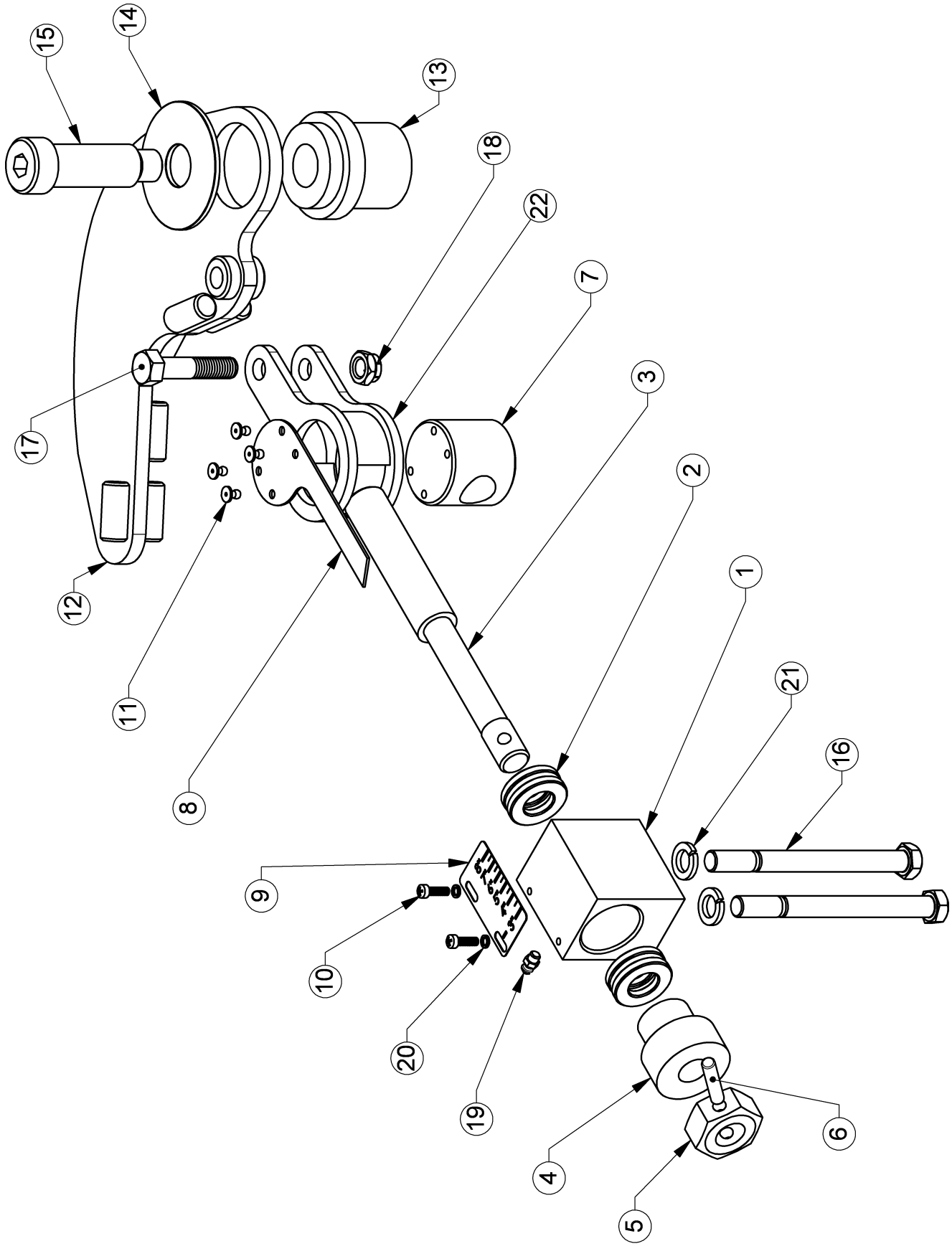
65K-2GJR Spinner Mount Assembly



65K-2GJR Spinner Mount Assembly

ITEM	QTY.	PART NO./DESCRIPTION	COMMENTS
1	1	30075 Spinner Mount Assembly	
2	1	JR032596 Spring,Spinner Mount	
3	1	30074 Vertical Tube Assembly	
4	1	806585_1-8 x 5.00lg. Hex Bolt Grd.9	
5	1	810821_1.00 Flat Washer	
6	1	806580_1.0-8 Lock Nut	
7	1	30066 Spinner Mount Arm Assembly	
8	4	-4 Ball Thrust Bearing	
9	4	PRP568334 O Ring	
10	1	30070 Pivot Base Assembly, Spinner	
11	2	30093 Quick Pin, Spinner	
12	2	30080 Washer, Spinner Mount	
13	2	PRP568-218 O Ring	
14	2	806681 1_1.2-12 Castle Nut	
15	2	807493-250 Cotter Pin	
16	2	92391A056 Pin Clip, JR	
17	6	1103K1 Grease Fitting, Straight	
18	2	806436_5.8-11 x 1.50 lg. Hex Bolt Grd. 9	
19	2	806267_1.2-13 x 1.50lg. Hex Bolt	
20	2	810732_5.8 Lock Washer	
21	2	810703_1.2 Lock Washer	

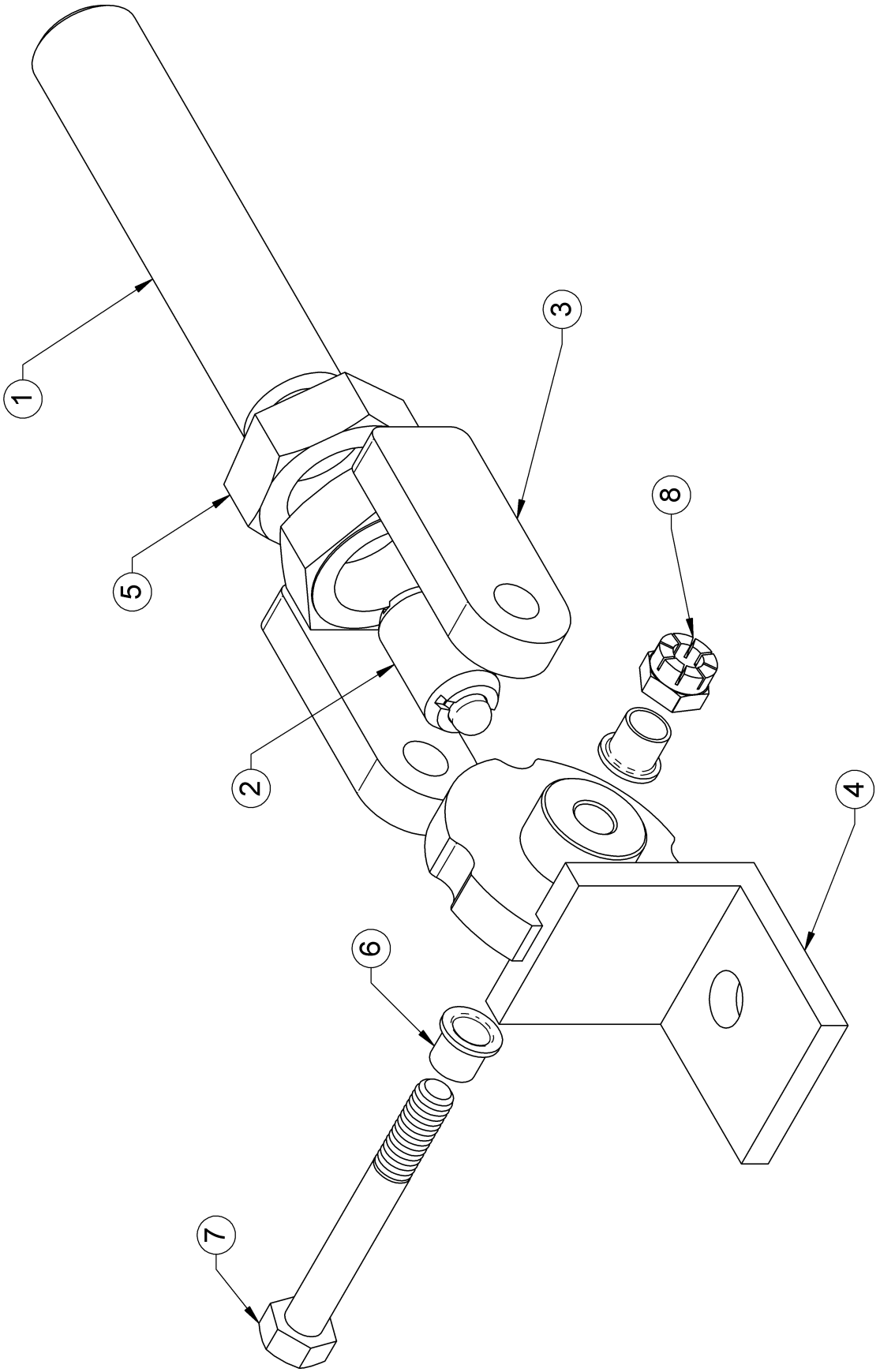
65K-2GJR Pipe Stop Assembly



65K-2GJR Pipe Stop Assembly

ITEM	QTY.	PART NO./DESCRIPTION	COMMENTS
1	1	30049A Adjust Base	
2	2	106 Ball Thrust Bearing Aseembly	
3	1	30050 Adjust Screw	
4	1	20061A Shock Sleeve	
5	1	20070 Adjust Nut	
6	1	807507-1 5.16 X 1 1.2 Dowel Pin	
7	1	30051 Adjust Clevis	
8	1	30054 Pointer	
9	1	30033 Index, Pipe Stop	
10	2	809403-1_10-32 x .625lg. Phils. Hd Screw SS	
11	4	807801_ Pop Rivet	
12	1	30008 Pipe Stop Assembly	
13	1	30058 Pipe Stop Rubber Mount	
14	1	20029-1 Washer	
15	1	30060 Pivot Bolt, Pipe Stop Modified	
16	2	806313-2 1.2 -13 X 5.50 Lg Hex Bolt	
17	1	806289_1.2-13 x 2.25lg. Hex Bolt	
18	1	806221_1.2-13 Flex Nut	
19	1	1103K1 Grease Fitting, Straight	
20	2	809476_10 Lock Washer, High Collar	
21	2	810703_1.2 Lock Washer	
22	1	30051A Adjust Clevis Welded Assy	

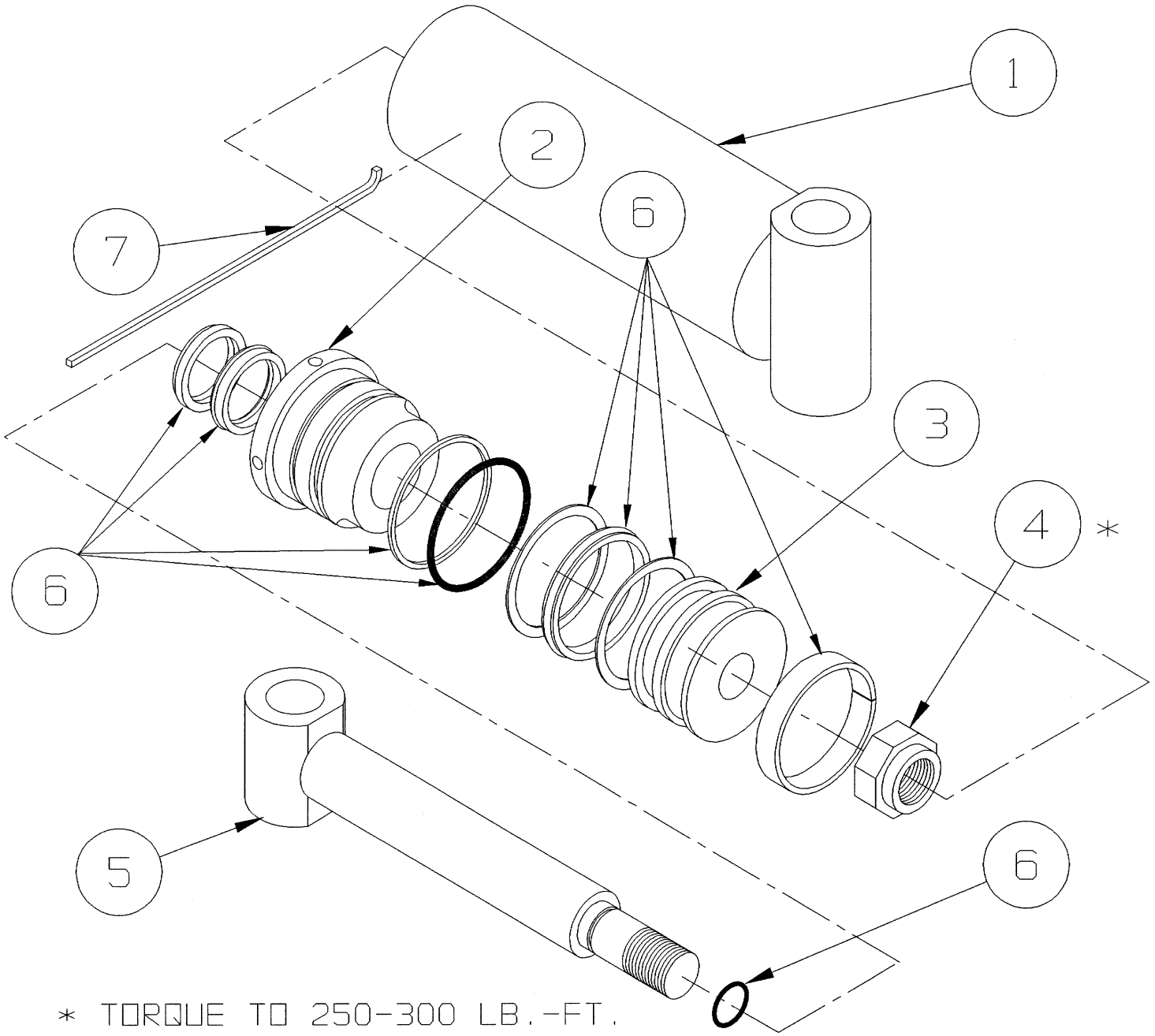
65K-2GJR Adjust Nut Locking Assemby



65K-2GJR Adjust Nut Locking Assemby

ITEM	QTY.	PART NO./DESCRIPTION	COMMENTS
1	1	30281 Arm	
2	1	84985A74 Spring Plunger	
3	1	30281-1 Swing Arm Assembly	
4	1	30286-1 Cam Mount Assembly	
5	1	806579_7.8-14 Jam Nut	
6	2	FB56-3 Flanged Bushing	
7	1	805970_5.16-18 x 2.50 lg. Hex Bolt	
8	1	805890-500 Flex Lock Nut (21FAF518)	

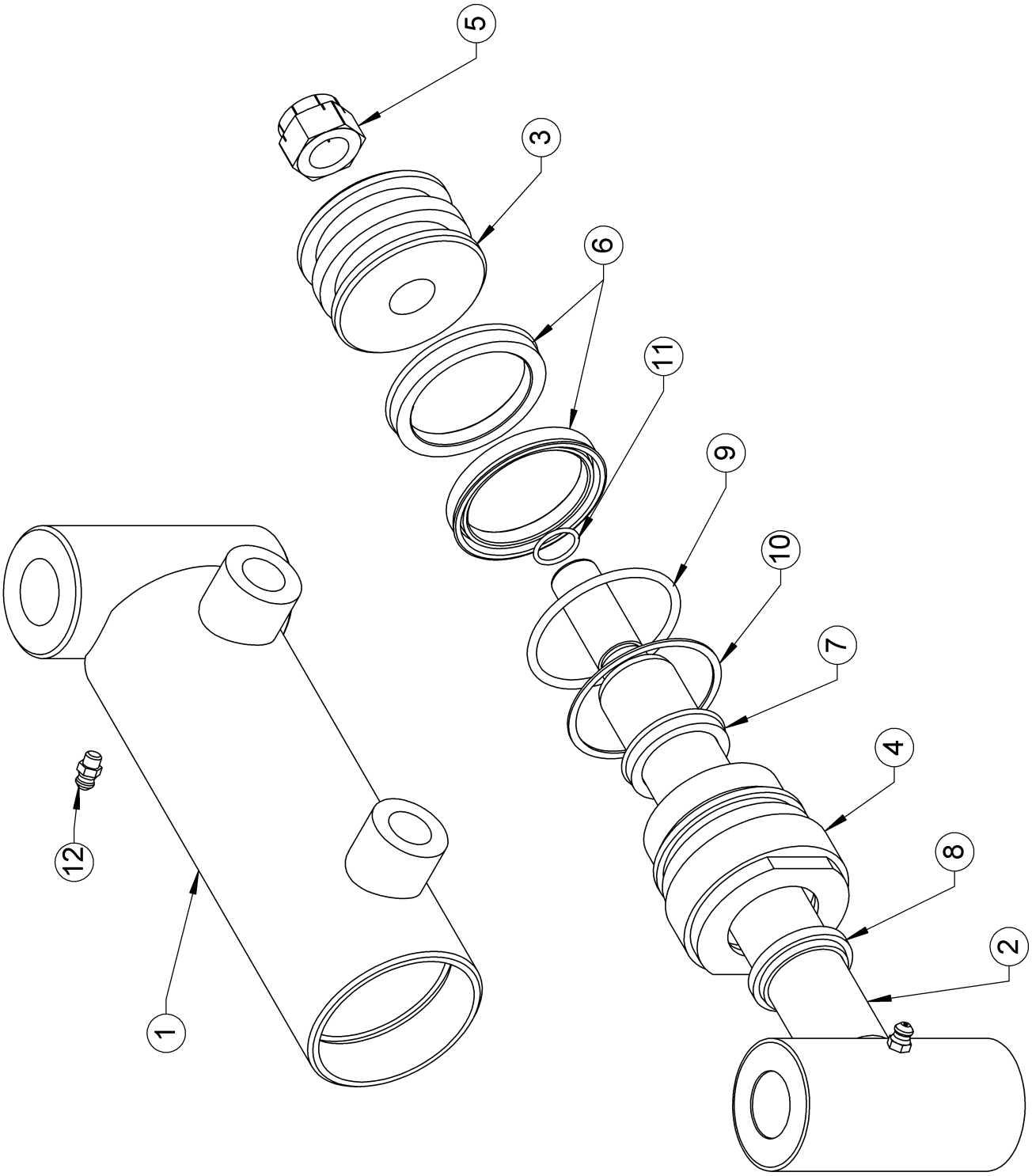
65K-2GJR Grip Cylinder



65K-2GJR Grip Cylinder

ITEM	QTY.	PART NO./DESCRIPTION	COMMENTS
1	3	061-TH4J097 Grip Cylinder Tube Assembly	
2	3	061-TH73780 Grip Cylinder Rod Head	
3	3	061-TH74897 Grip Cylinder Piston	
4	3	061-TH20188 Grip Cylinder Lock Nut	
5	3	061-TH5E62 Grip Cylinder Rod	
6	3	061-J26-SK Seal Kit	
7	3	061-TH20031 Retainer Ring	

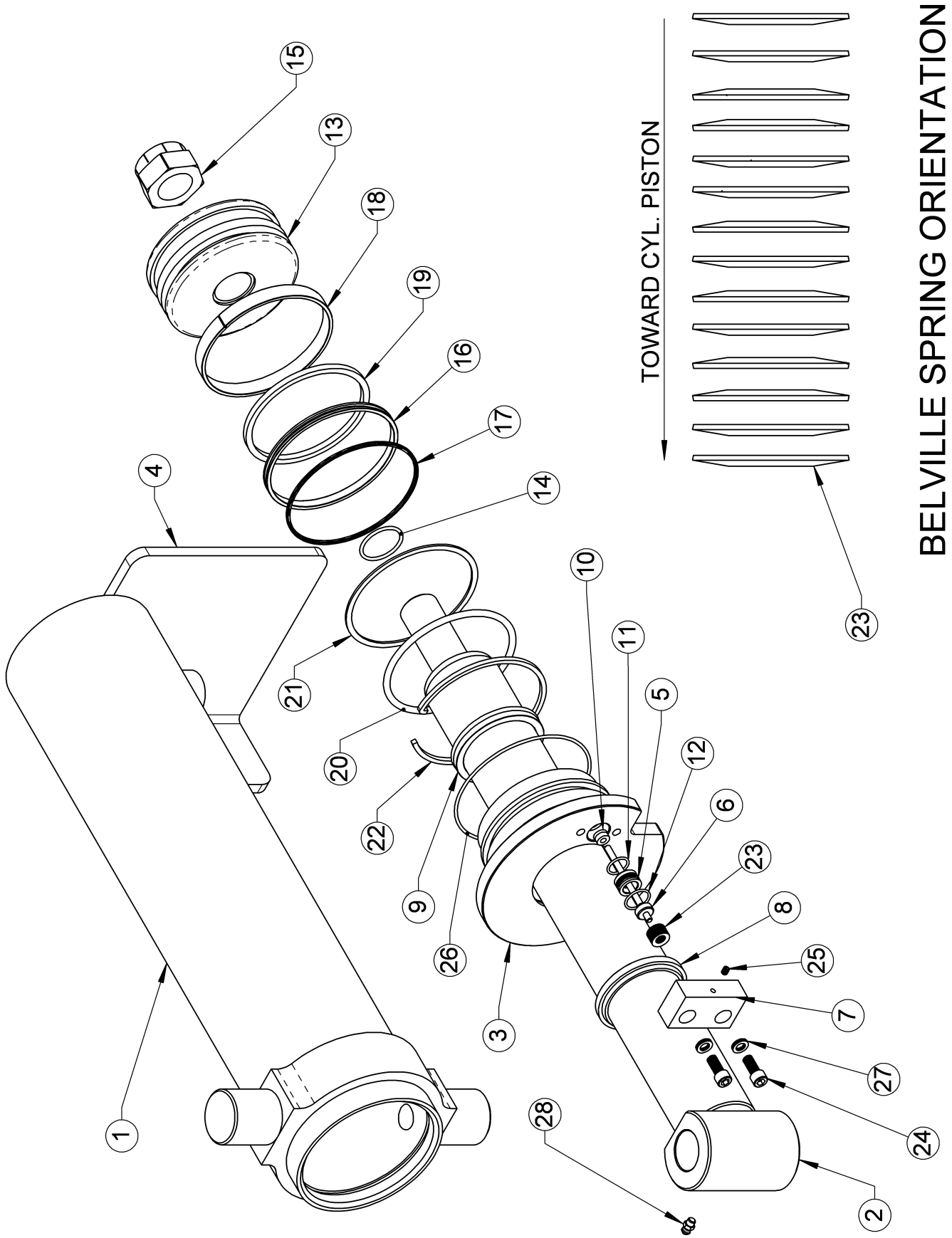
65K-2GJR 24CYL25-AS & BS GRIP CYLINDER, TOP/ BOTTOM



65K-2GJR 24CYL25-AS & BS GRIP CYLINDER, TOP/ BOTTOM

ITEM	QTY.	PART NO./DESCRIPTION	COMMENTS
1	1	2534-AS.BS Barrel, Spinner Grip	AS FOR TOP, BS FOR BTM
2	1	58063 Rod, Spinner Grip	
3	1	70017 Piston, Spinner Grip	
4	1	25000 Seal Retainer, Spinner Grip	
5	1	SL Stover Nut 3.4-16, Spinner Grip Cyl.	
6	2	002-138 Piston Seal, Spinner Grip Cyl.	Only in Kit #031-24CYL25RK
7	1	1870-1250-312B Rod Seal	Only in Kit #031-24CYL25RK
8	1	SHD-1250 Rod Wiper, Spinner Grip Cyl.	Only in Kit #031-24CYL25RK
9	1	2-228-90 O Ring	Only in Kit #031-24CYL25RK
10	1	8-228 Back Up, Spinner Grip Cyl.	Only in Kit #031-24CYL25RK
11	1	2-016-90 O Ring, Spinner Grip Cyl.	Only in Kit #031-24CYL25RK
12	2	1103K1 Grease Fitting, Straight	

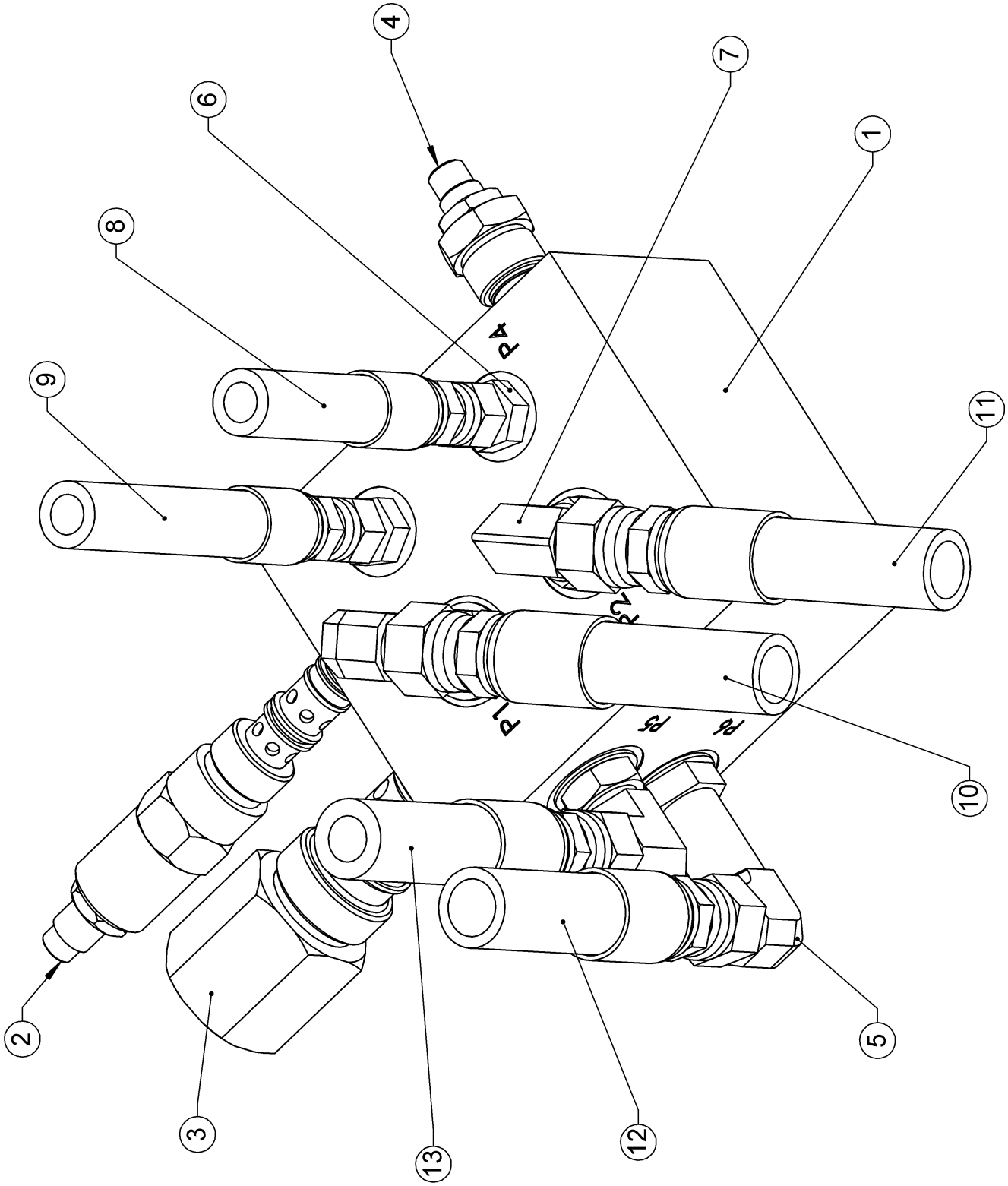
65K-2GJR J20 Torque Cylinder Assembly



65K-2GJR J20 Torque Cylinder Assembly

ITEM	QTY.	PART NO./DESCRIPTION	COMMENTS
1	1	TH4J099 Torque Cylinder Tube Assembly	
2	1	TH5E264 Rod, J20 Torque Cylinder	
3	1	TH74898 Rod Head, Torque Cylinder	
4	1	20259 Torque Cylinder Guard	
5	1	20238 Poppet Seat	
6	1	30064 Poppet Pin	
7	1	30065 Body, Poppet Valve	
8	1	10007 Rod Wiper, Torque Cylinder	J20-RK-WC Seal Kit
9	1	10017 Rod Seal, Torque Cylinder	J20-RK-WC Seal Kit
10	1	LTW-RK U Cup, Poppet Pin	
11	1	PRP568-016 O Ring, Poppet Seat	
12	1	PRP568-018 O Ring, Body	
13	1	73225 Piston, Torque Cylinder	
14	1	10418 O Ring, Torque Cylinder Rod	J20-RK-WC Seal Kit
15	1	20011_1 1.4 Flex Nut, H17 Torque Cylinder	
16	1	11963 Seal Retainer, H17 Torque Cylinder	J20-RK-WC Seal Kit
17	1	11963 Seal	J20-RK-WC Seal Kit
18	1	30218 Bearing, Piston H17 Torque Cylinder	
19	1	11963 Spring, Seal	J20-RK-WC Seal Kit
20	1	10236 O Ring, H17 Torque Cylinder	J20-RK-WC Seal Kit
21	1	10237 O Ring Backup, Torque Cylinder	J20-RK-WC Seal Kit
22	1	20087 Retainer Ring, H17 Torque Cylinder	
23	14	022S Bellville Spring	
24	2	805959_5.16-24 x .75 Socket Head Cap Screw	
25	1	809396-1_10-32 x .25 Socket Head Set Screw	
26	1	10904 O Ring, H17 Torque Cylinder	J20-RK-WC Seal Kit
27	2	91074A030 Lock Washer Assembly, 5.16	
28	1	1103K1 Grease Fitting, Straight	

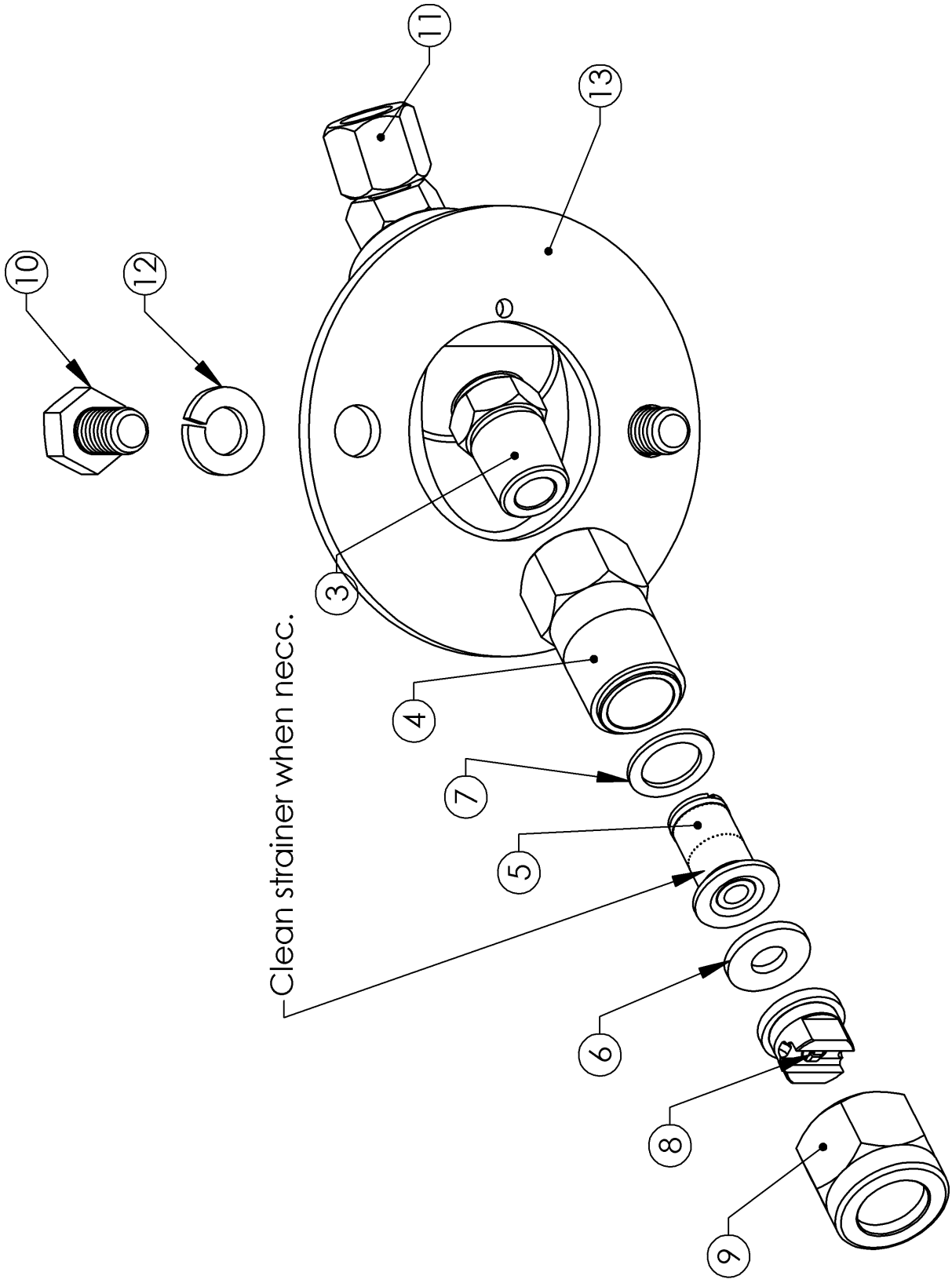
65K-2GJR Spinner Manifold



65K-2GJR Spinner Manifold

ITEM	QTY.	PART NO./DESCRIPTION	DESTINATION	COMMENTS
1	1	J2 Spinner Manifold, JR		
2	1	SV1 Sequence Valve		
3	1	SV3 Differential Valve		
4	1	SV2 Spinner Neeble Valve		
5	2	206209-8-8S_8MORB x 8MJIC Fitting 90 Ext.		
6	2	202702-6-6S_-6MORB x -6MJIC Str. Adaptor		
7	2	2062-8-8S 8MORBX8MJIC Fitting 90		
8	1	JHOS-5-41 6FJICx-6FJICx26.00Lg. Hose	Bottom Spin Cyl. Rod Side	Port P4
9	1	JHOS-6-42 6FJICx-6FJICx29.00lg. Hose	Bottom Spin Cyl. Cap Side	Port P3
10	1	JHOS-26-40_-8FJICx-8FJICx60 Lg. Hose	Main Man. Port P13	Port P1
11	1	JHOS-25-39_-8FJICx-8FJICx60 Lg. Hose	Main Man. Port P14	Port P2
12	1	HOS-26_-8FJICx-8FJICx26.00lg. Hose	Spinner Shift Valve (IN)	Port P6
13	1	HOS-27_-8FJICx-8FJICx33.00lg. Hose	Spinner Shift Valve (OUT)	Port P5

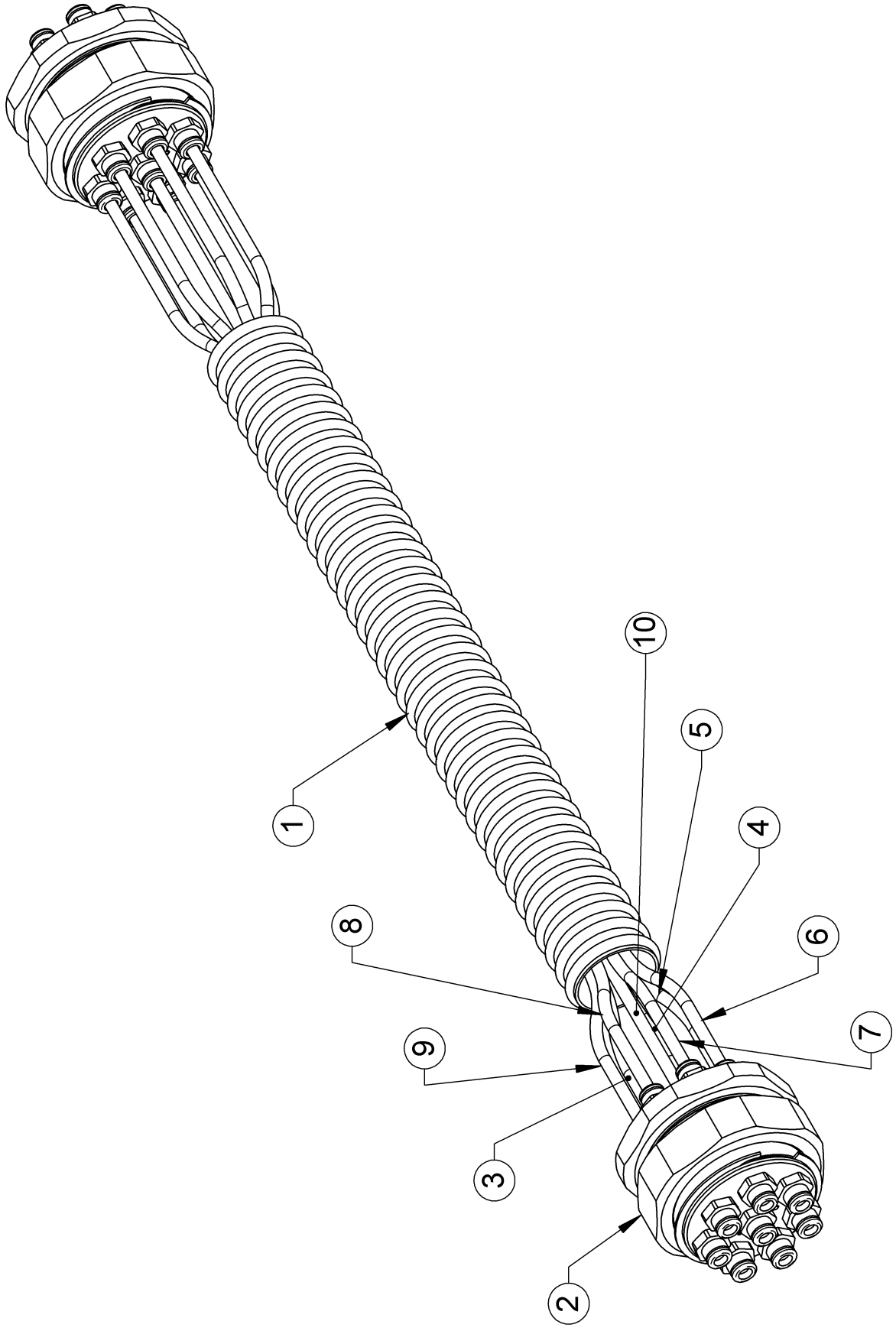
65K-2GJR 25726 Chain Oiler Assembly



65K-2GJR 25726 Chain Oiler Assembly

ITEM NO.	QTY./ASSY.	PART NO./ DESCRIPTION	COMMENTS
3	1	2083-4-45 1-4 NPT ADAPTER	
4	1	11432-SSP Body, SST, Polished	
5	1	8536-200 STRAINER, SST	
6	1	7894-NY TIP GASKET, NYLON	
7	1	7894-NY TIP GASKET, NYLON	
8	1	TP400025-TC .013 Nozzle	
9	1	7890-SSP CAP,SST, POLISHED	
10	2	805916_5.16-18 x .50 LG. HEX BOLT	
11	1	2049-2-2 1-8,45 Drg Adapter	
12	2	810616_5.16 Lock Washer	
13	1	25726 Chain Oiler Weldment	

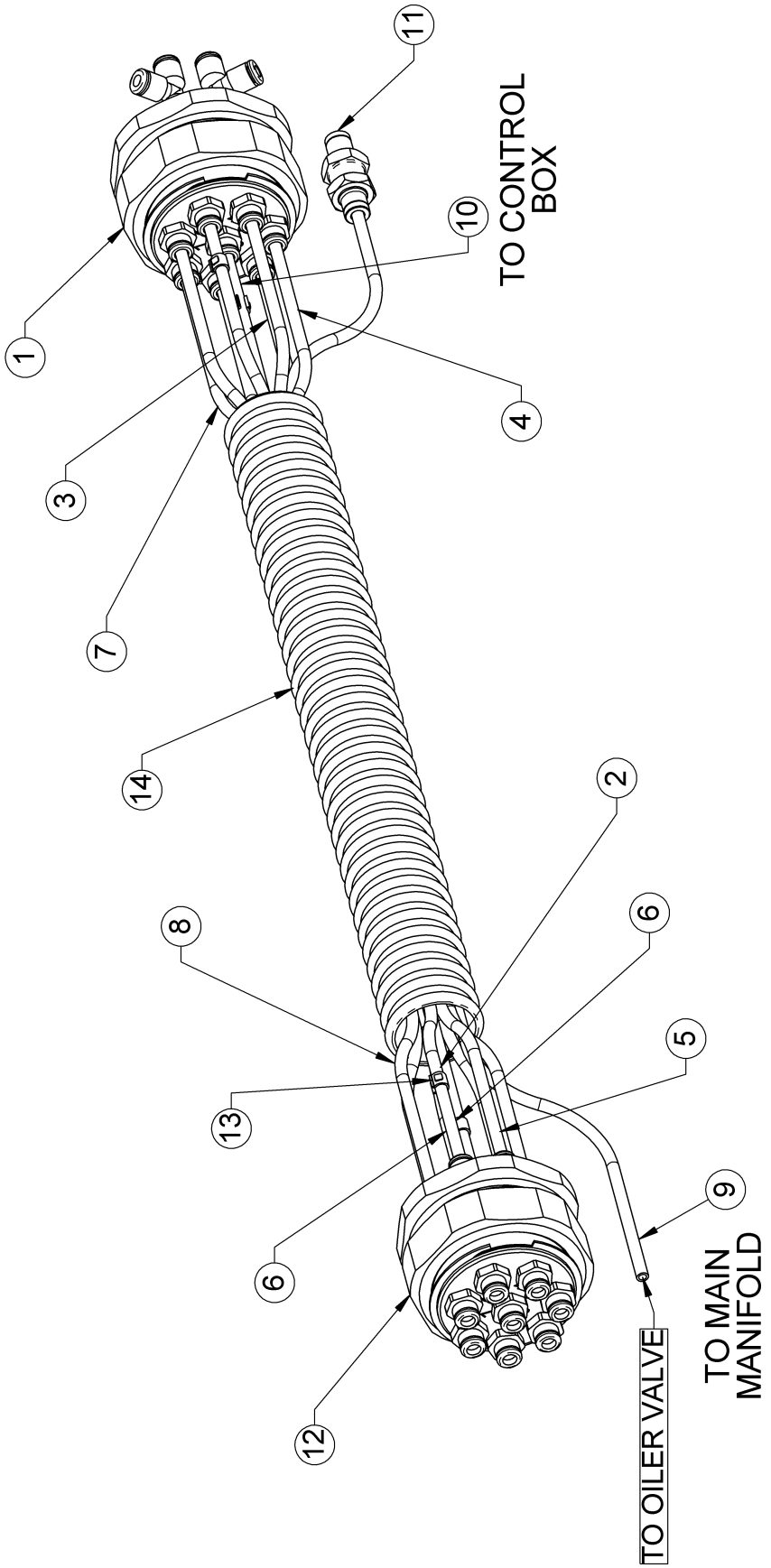
65K-2GJR Right Control TubeAssembly



65K-2GJR Right Control TubeAssembly

ITEM	QTY.	PART NO./DESCRIPTION	COMMENTS
1	1	B2100- Lite Flex Conduit 1 inch dia.x 71 lg	
2	2	A51R-A Right Control Handle Coupler Assy	
3	1	A40-6 Black Air Hose	Port 1
4	1	A40-4 Clear Air Hose	Port 2
5	1	A40-2 Orange Air Hose	Port 3
6	1	A40-7 Green Air Hose	Port 4
7	1	A40-3 Blue Air Hose	Port 5
8	1	A40-8 Gray Air Hose	Port 6
9	1	A40-1 Yellow Air Hose	Port 7
10	1	A40-5 Red Air Hose, Center	Center Port

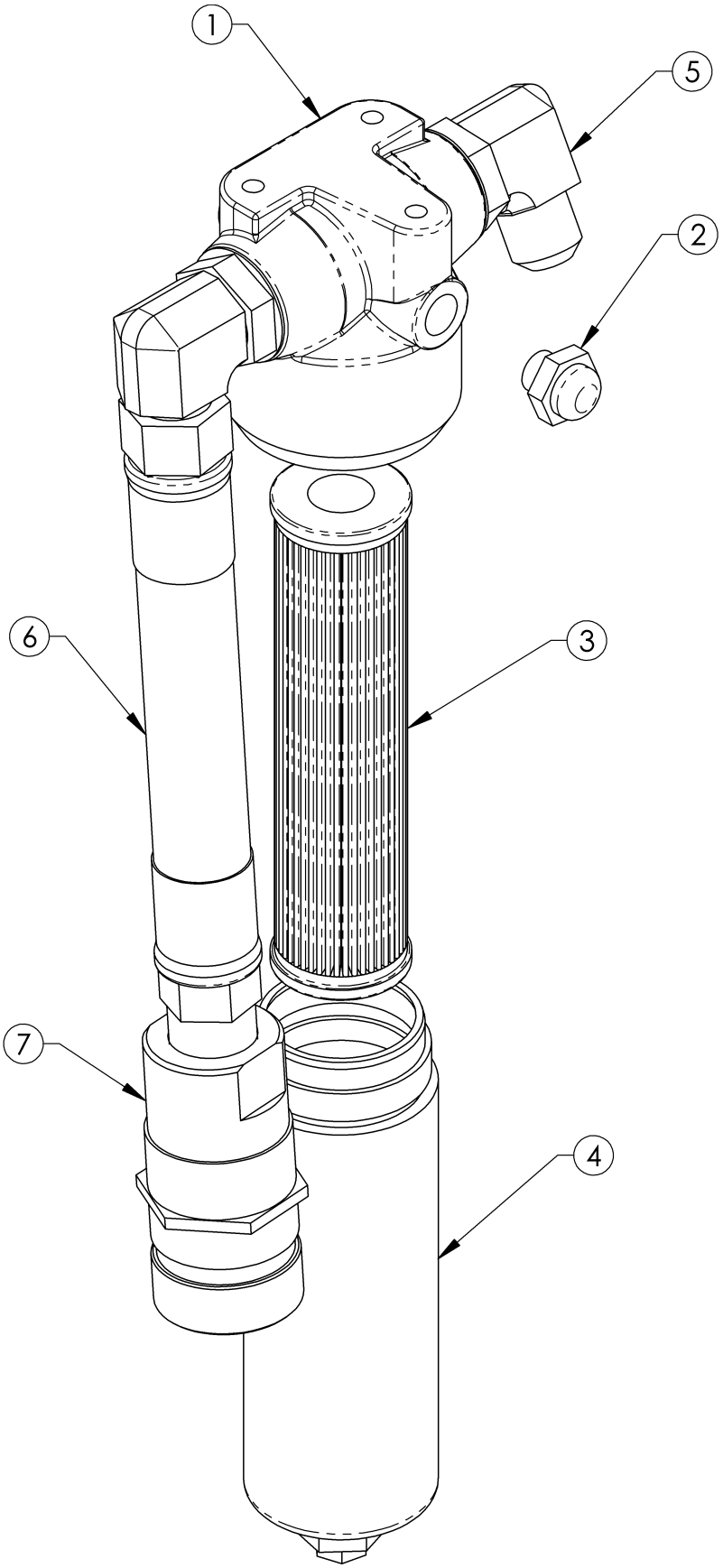
65K-2GJR A41L Left Control TubeAssembly



65K-2GJR A41L Left Control TubeAssembly

ITEM	QTY.	PART NO./DESCRIPTION	COMMENTS
1	1	65K-2GJR A50L-A Left Control Handle Coupler Assy	
2	1	A40-5 Red Air Hose	Port 1
3	1	A40-4 Clear Air Hose	Port 2
4	1	A40-3 Blue Air Hose	Port 3
5	1	A40-2 Orange Air Hose	Port 4
6	1	A40-1 Yellow Air Hose	Port 5 & Ctr Port
7	1	A40-7 Green Air Hose	Port 7
8	1	A40-6 Black Air Hose	Port 6
9	1	A40-8 Gray Air Hose Oiler	Item 9 to Oiler Valve
10	1	A40-1 Yellow Straight Air Hose	
11	1	A53 5.32 Str Union Fitting	
12	1	65K-2GJR A51R-A Right Cont Hdl Cpl Assy	See Explosion
13	4	TM1 Poly Conn Tube Marker	
14	1	B2100- Lite Flex Conduit 1 inch dia.x 71 lg.	

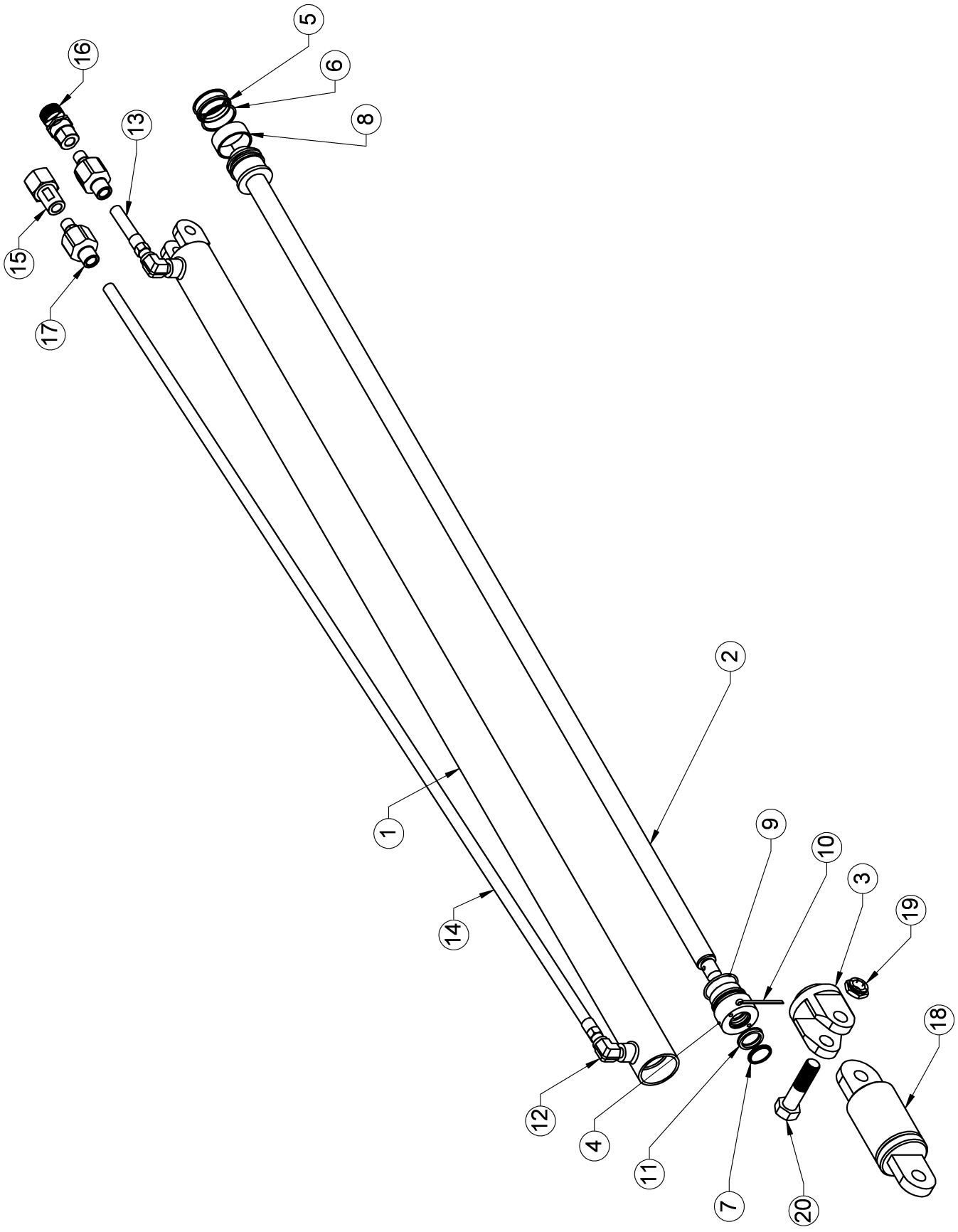
H25 Hydraulic FilterAssembly



H25 Hydraulic FilterAssembly

ITEM NO.	QTY./THIS ASSY	PART NO./ DESCRIPTION	COMMENTS
1	1	Hydraulic Filter Body	
2	1	Indicator Fitting	
3	1	H25A Filter Element	
4	1	H25B Filter Canister	
5	2	2062-16-12S_16MORB x 12MJIC Fitting 90	
6	1	HOS-1A_1 MNPTx-12FJICx180.00lg_-16 Hose	
7	1	H52 Male Quick Disconnect	

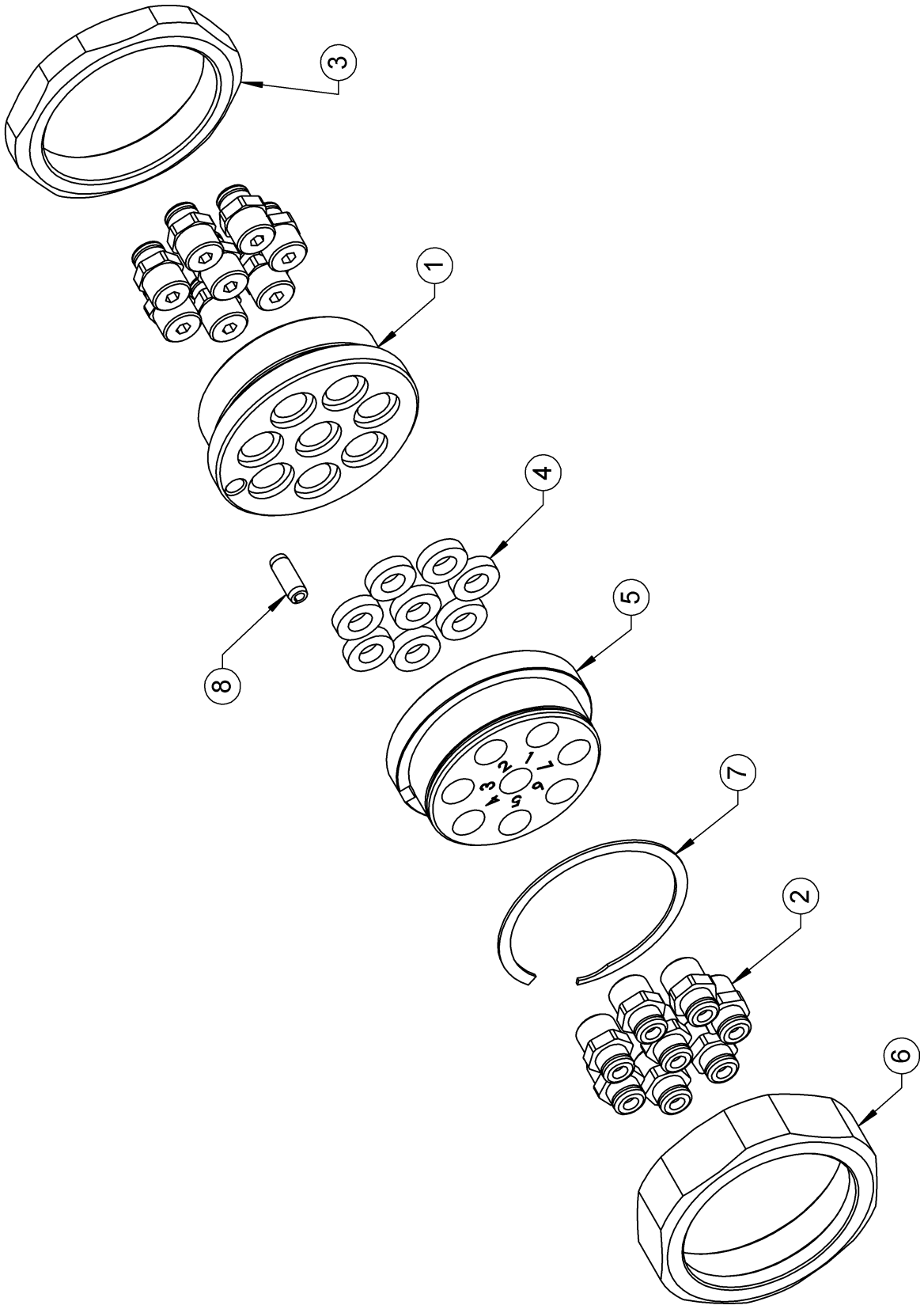
65K-2GJR Raise Lower Cyl Assembly (H20-S)



65K-2GJR Raise Lower Cyl Assembly (H20-S)

ITEM	QTY.	PART NO./DESCRIPTION	COMMENTS
1	1	2572-9 Barrel, Raise Lower Cylinder	
2	1	2572-6 Rod, Raise Lower Cylinder	
3	1	2572-8 Rod Clevis, Raise Lower Cylinder	
4	1	2572-7 Seal Retainer, Raise Lower Cyl.	H20-RK Seal Kit
5	1	TPO-28 Piston Seal	H20-RK Seal Kit
6	2	TPO-28 Backup, Piston Seal	H20-RK Seal Kit
7	1	940-15 Rod Wiper, Raise Lower Cyl.	H20-RK Seal Kit
8	1	MCD-2500-1000 Wear Ring, Raise lower Cyl.	H20-RK Seal Kit
9	1	2-228-90 O Ring	H20-RK Seal Kit
10	1	2572-5 Cotter Pin 3.16 dia. x 3.5 lg, Raise Lower Cyl.	
11	1	1870-1375-312B Rod Seal, Raise Lower Cyl.	H20-RK Seal Kit
12	2	2089-8-8S_8MNPT x 8FNPT Fitting 90 Elbow	
13	1	HOS-23_1.2 MNPT x 1.2 MNPTx 8.50lg.-8Hyd. Hose	
14	1	HOS-22_1.2 MNPT x 1.2 MNPTx 84.0lg.-8Hyd. Hose	
15	1	H26F_Female Quick Disconnect	
16	1	H26M_Male Quick Disconnect	
17	2	FS59004 Swivel Joint	
18	1	20230 Swivel Assembly	
19	1	806594-500_1-14 Lock Nut	
20	1	806622_1.00-14 x 4.00lg. Hex Bolt	

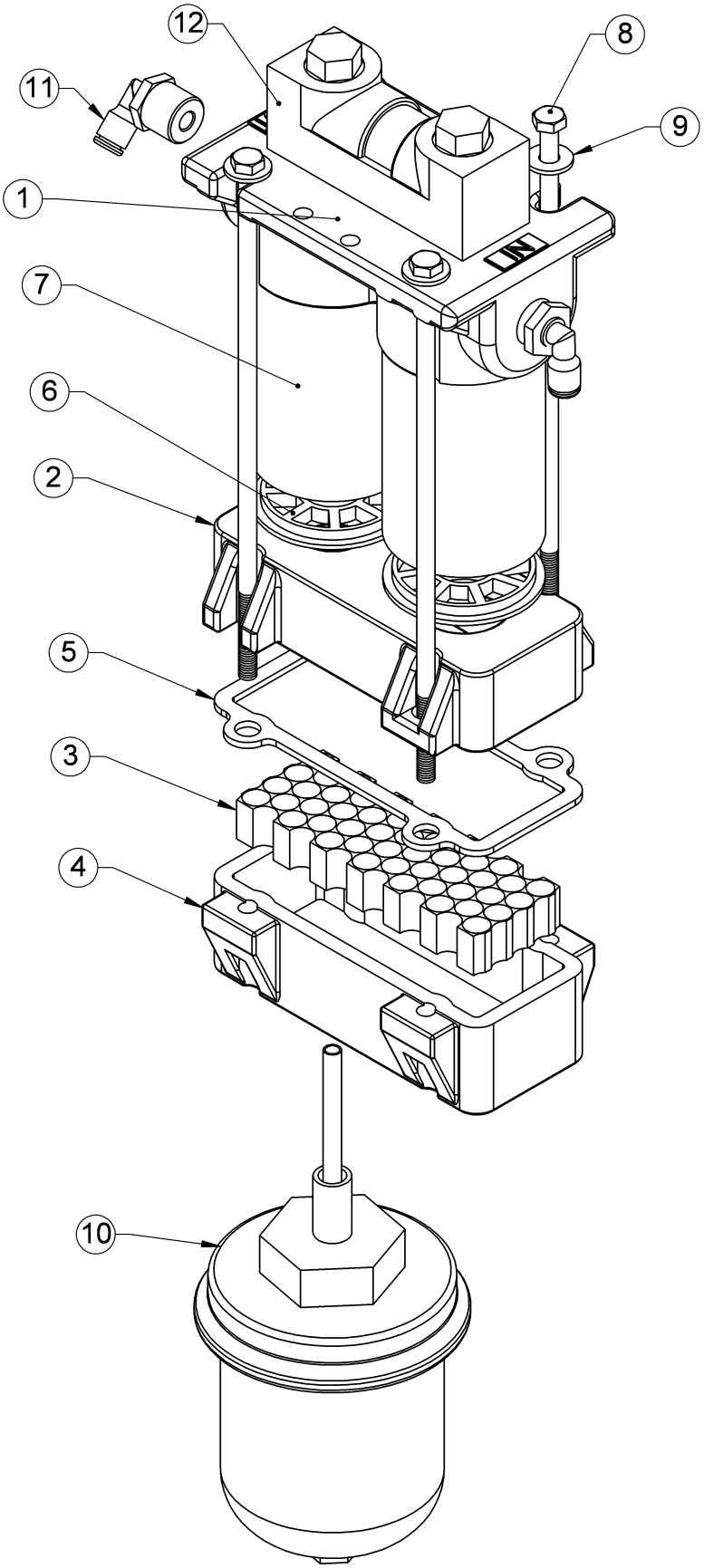
65K-2GJR A51R-A Right Control Handle Coupler Assembly



65K-2GJR A51R-A Right Control Handle Coupler Assembly

ITEM NO.	QTY./ASSY.	PART NO./DESCRIPTION	COMMENTS
1	1	20033 Male Coupler	
2	16	A27 5.32 x 1.8 PTC Str. Fitting	
3	1	20031 Panel Nut	
4	8	90130A029 Rubber Washer Seal	
5	1	20034 Female Coupler	
6	1	20032 Swivel Nut	
7	1	US-181-S Retainer Ring	
8	1	807512_3.16 x .50lg. Roll Pin	

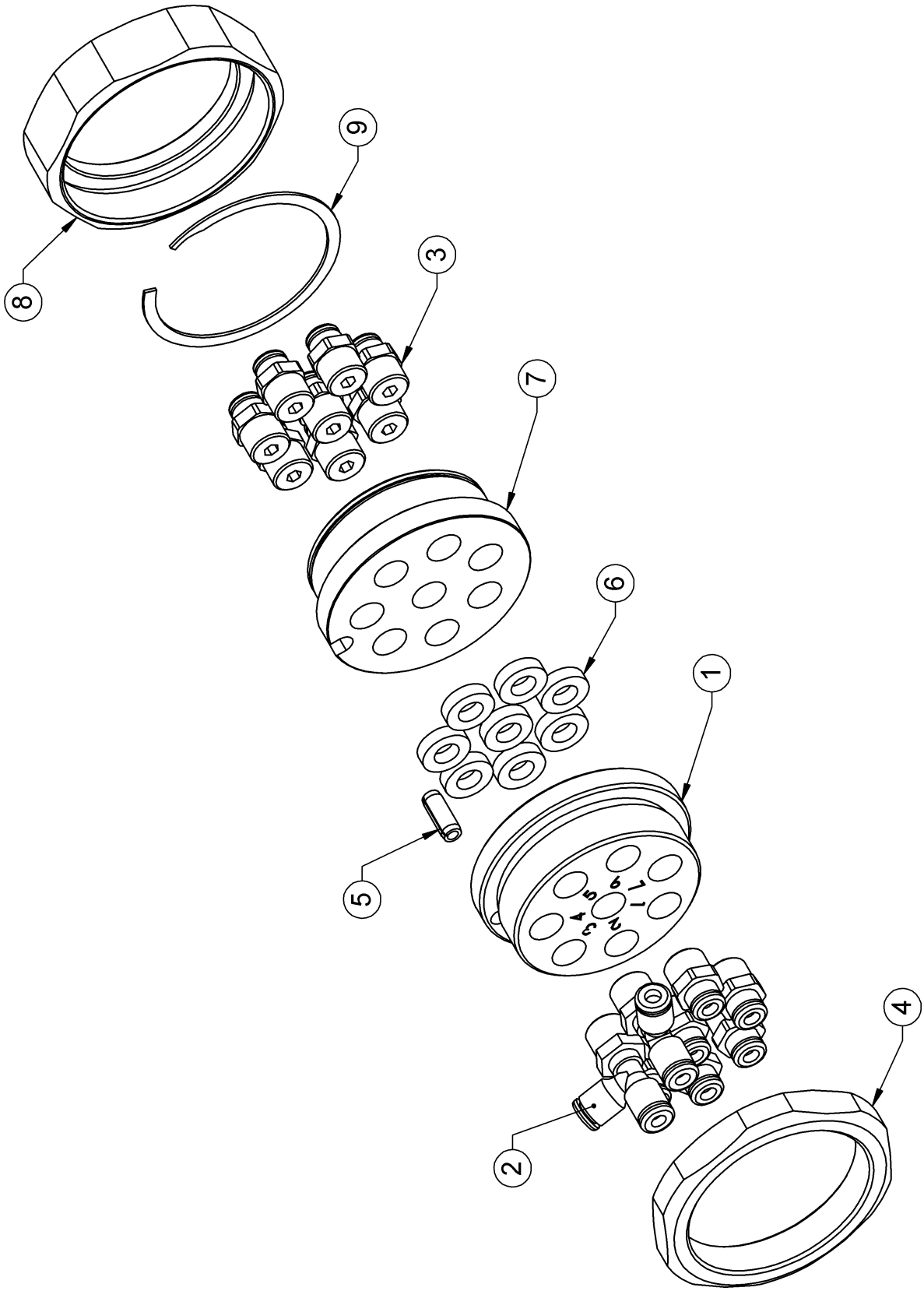
65K-2GJR A22 On Board Air Filter Assembly



65K-2GJR A22 On Board Air Filter Assembly

ITEM	QTY.	PART NO./DESCRIPTION	COMMENTS
1	1	A22 Top Cover, Air Filter	
2	1	A22 Base Top, Air Filter	
3	1	A22H Base Core, Air Filter	
4	1	A22E Base, Air Filter	
5	1	A22D Gasket, Air Filter	
6	4	A22 Star Spacer, Air Filter	
7	2	A22B_C Filter Cartrige, Air Filter	
8	4	A22F Corner Bolt, Air Filter	
9	4	810557_3.16 Flat Washer	
10	1	A22A Float Drain, Air Filter	
11	2	A25 5.32 x 1.4 PTC Elbow	
12	1	A22I Indicator, Air Filter	

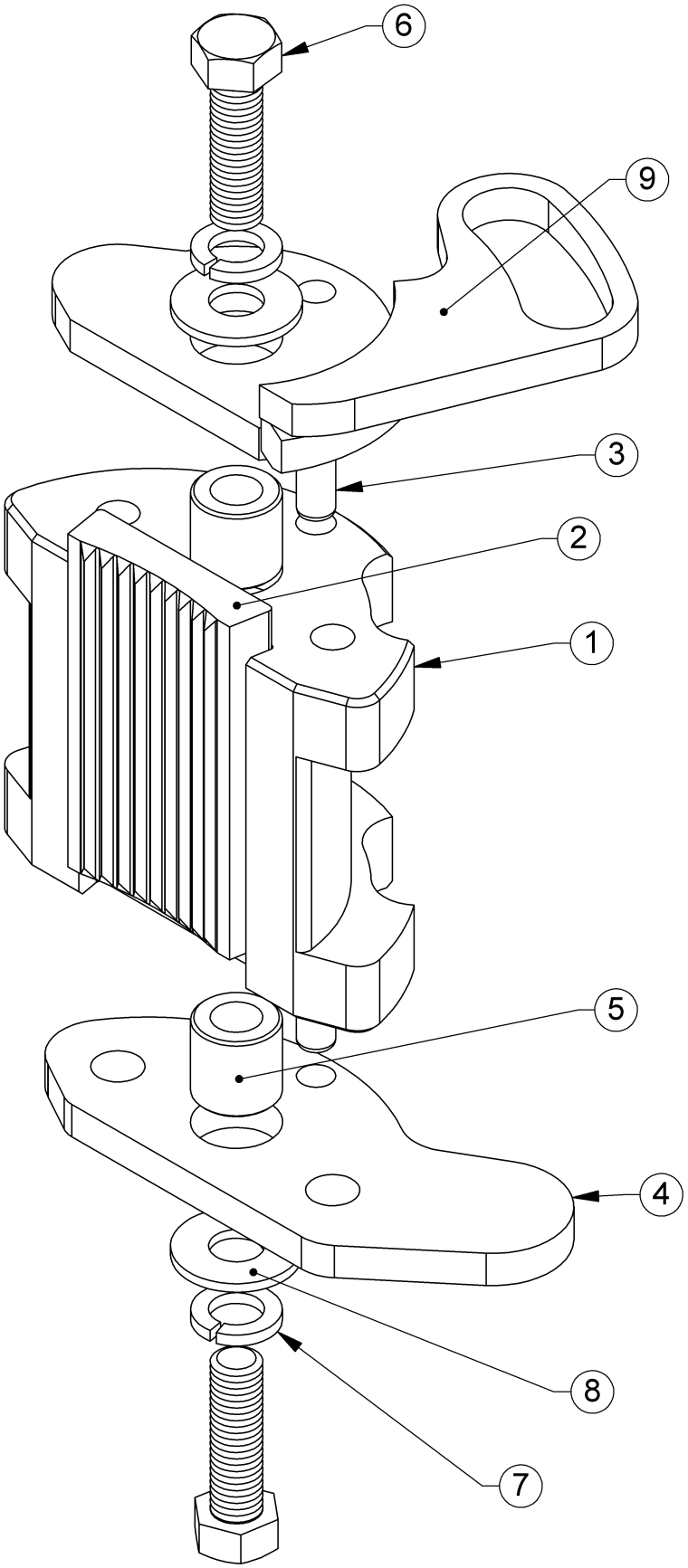
65K-2GJR A50L-A Left Control Handle Coupler Assembly



65K-2GJR A50L-A Left Control Handle Coupler Assembly

ITEM NO.	QTY	PART NO./DESCRIPTION	COMMENTS
1	1	20033 Male Coupler	
2	2	A28 5.32 x 1.8 PTC Male Run T	Ports 4 & 5 on item 1 only
3	14	A27 5.32 x 1.8 PTC Str. Fitting	
4	1	20031 Panel Nut	
5	1	807512_3.16 x .50lg. Roll Pin	
6	8	90130A029 Rubber Washer Seal	
7	1	20034 Female Coupler	
8	1	20032 Swivel Nut	
9	1	US-181-S Retainer Ring	

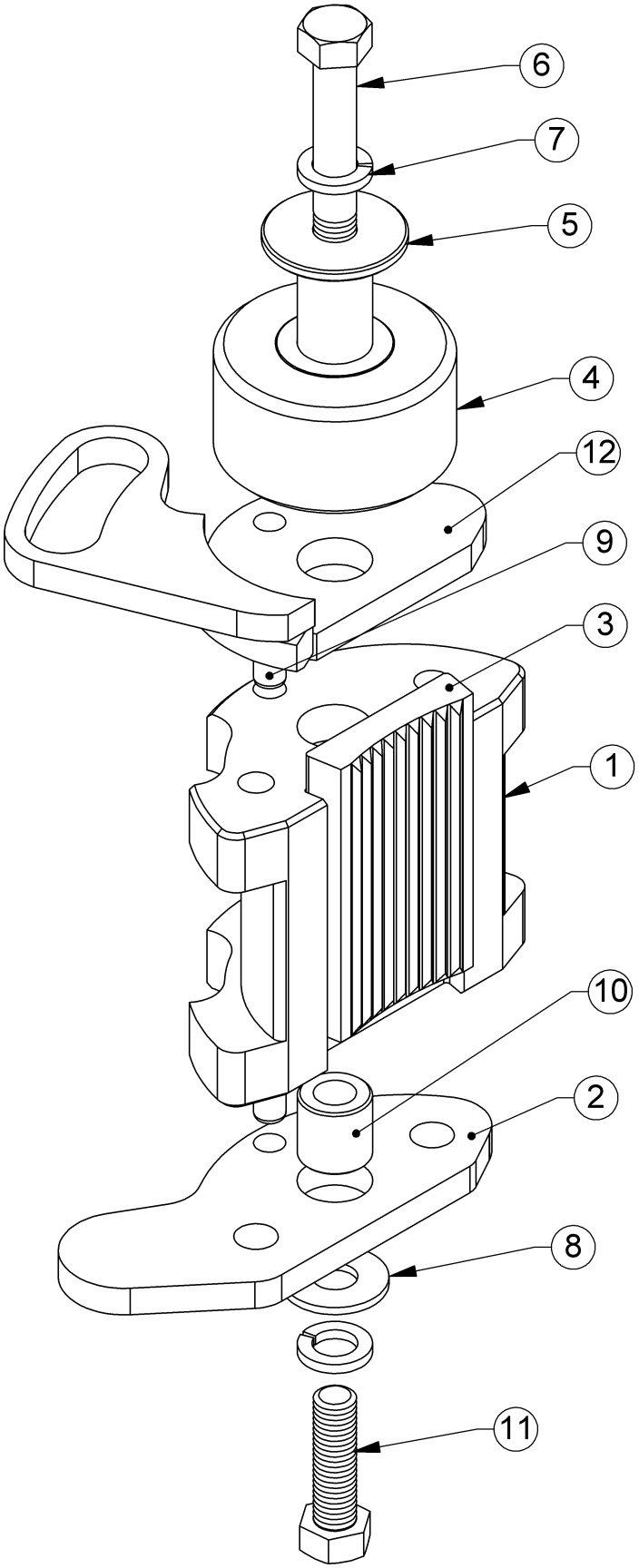
65K-2GJR Bottom Heel Die Holder Assembly



65K-2GJR Bottom Heel Die Holder Assembly

ITEM	QTY.	PART NO./DESCRIPTION	COMMENTS
1	1	30031 Die Holder, Heel	
2	1	20194 Die	
3	2	98381A622_3.8 Dia. x .75 lg. SS Dowel Pin	
4	1	20213A Die Retainer, Bottom	
5	2	20208-870 Spacer, Die Holder	
6	2	806276_1.2-13 x 1.75 Hex Bolt	
7	2	810703_1.2 Lock Washer	
8	2	810705_1.2 Flat Washer	
9	1	30012A-2A Top & Btm Die Retainer Welded Assy	

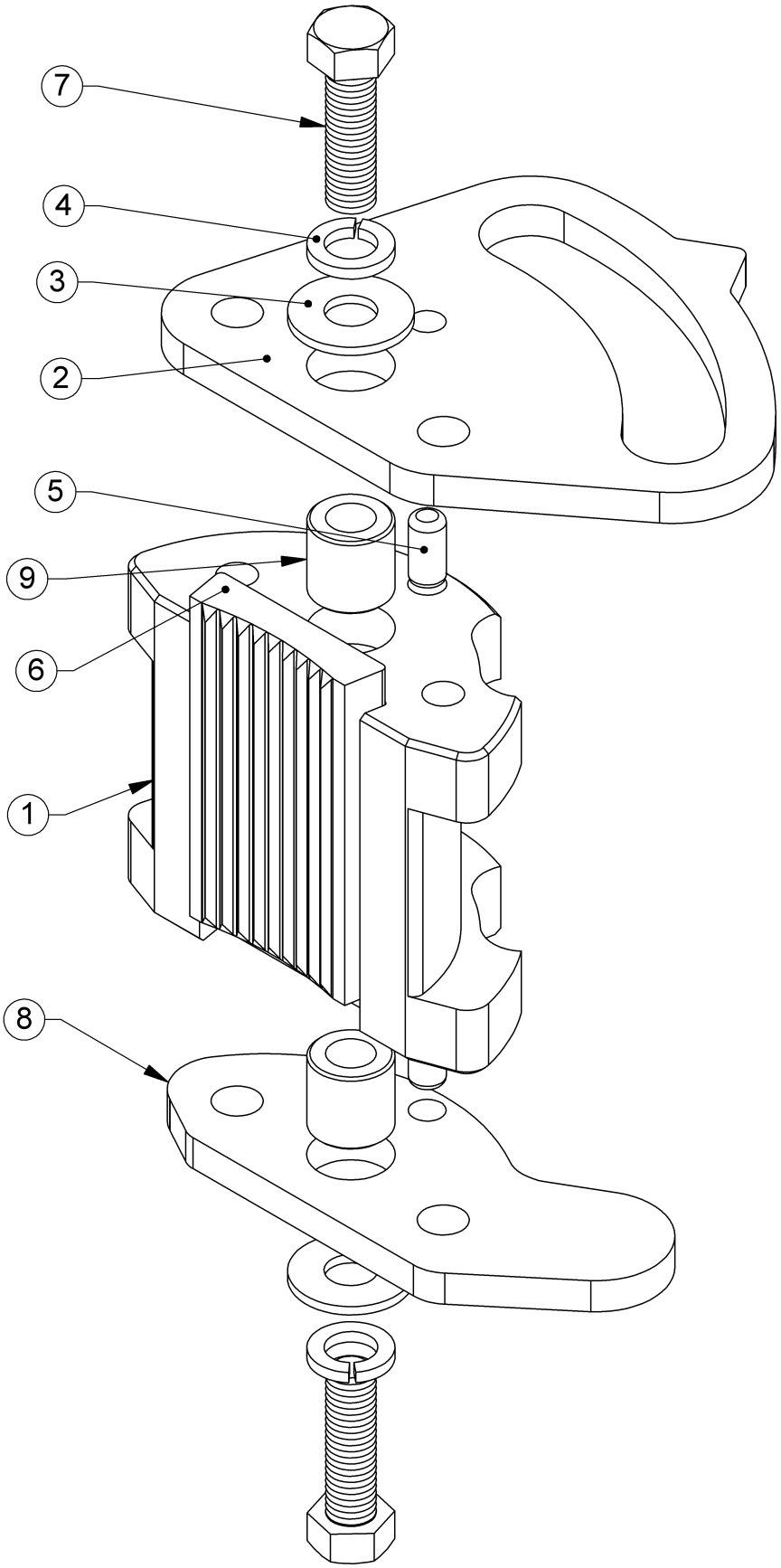
65K-2GJR Middle Heel Die Holder Assembly



65K-2GJR Middle Heel Die Holder Assembly

ITEM	QTY.	PART NO./DESCRIPTION	COMMENTS
1	1	30031 Die Holder, Heel	
2	1	20213A Die Retainer, Bottom	
3	1	20194 Die	
4	1	20210 Roller Assembly	
5	1	20208A Spacer Bushing, Roller	
6	1	806303_1.2-13 x 3.50 Hex Bolt, Grade 8SLDPRT	
7	2	810703_1.2 Lock Washer	
8	1	810705_1.2 Flat Washer	
9	2	98381A622_3.8 Dia. x .75 lg. SS Dowel Pin	
10	1	20208-870 Spacer, Die Holder	
11	1	806276_1.2-13 x 1.75 Hex Bolt	
12	1	30012A-1A Mid Die Retainer Welded Assy	

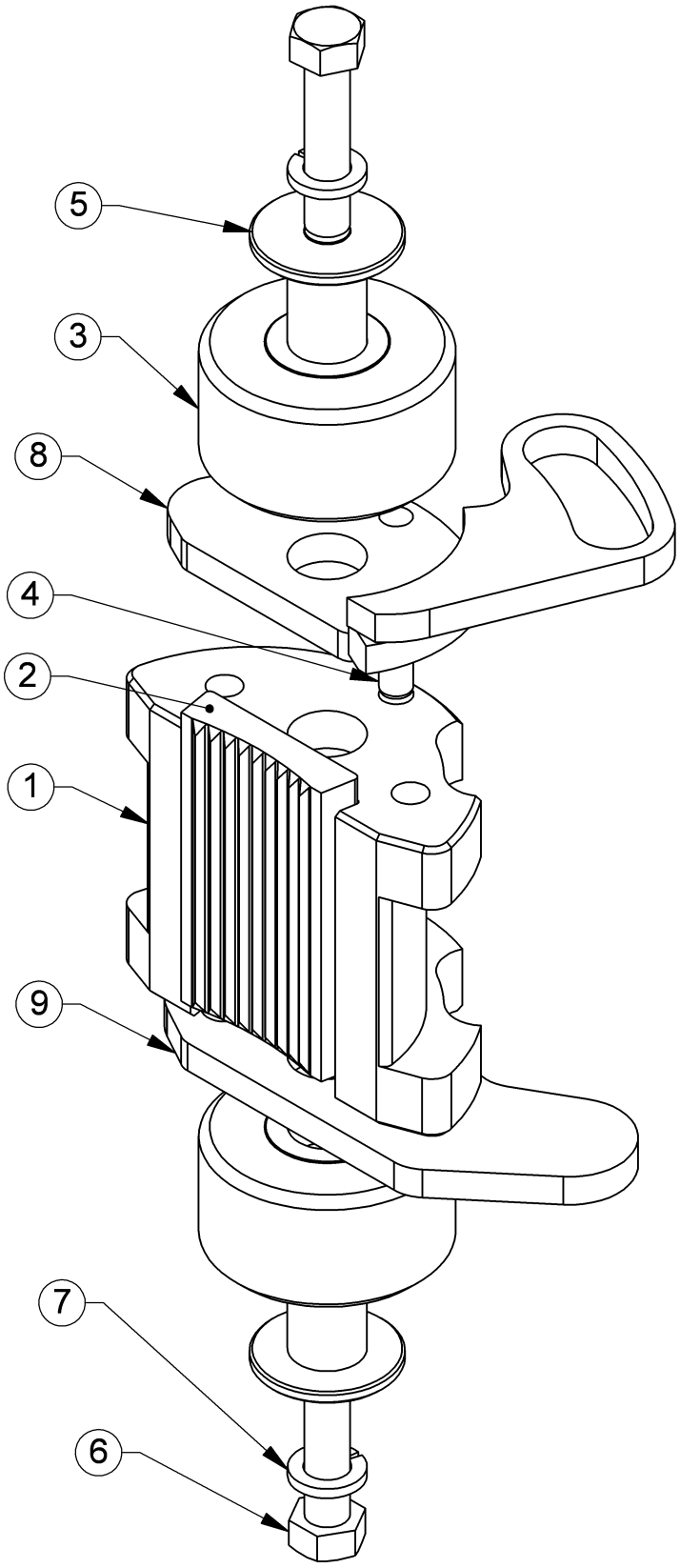
65K-2GJR Middle Hook Die Holder Assembly



65K-2GJR Middle Hook Die Holder Assembly

ITEM NO.	QTY./ASSY.	PART NO./DESCRIPTION	COMMENTS
1	1	30031 Die Holder, Heel	
2	1	30012-1 Die Retainer, Hook Top	
3	2	810705_1.2 Flat Washer	
4	2	810703_1.2 Lock Washer	
5	2	98381A622_3.8 Dia. x .75 lg. SS Dowel Pin	
6	1	20194 Die	
7	2	806276_1.2-13 x 1.75 Hex Bolt	
8	1	20213A Die Retainer, Bottom	
9	2	20208-870 Spacer, Die Holder	

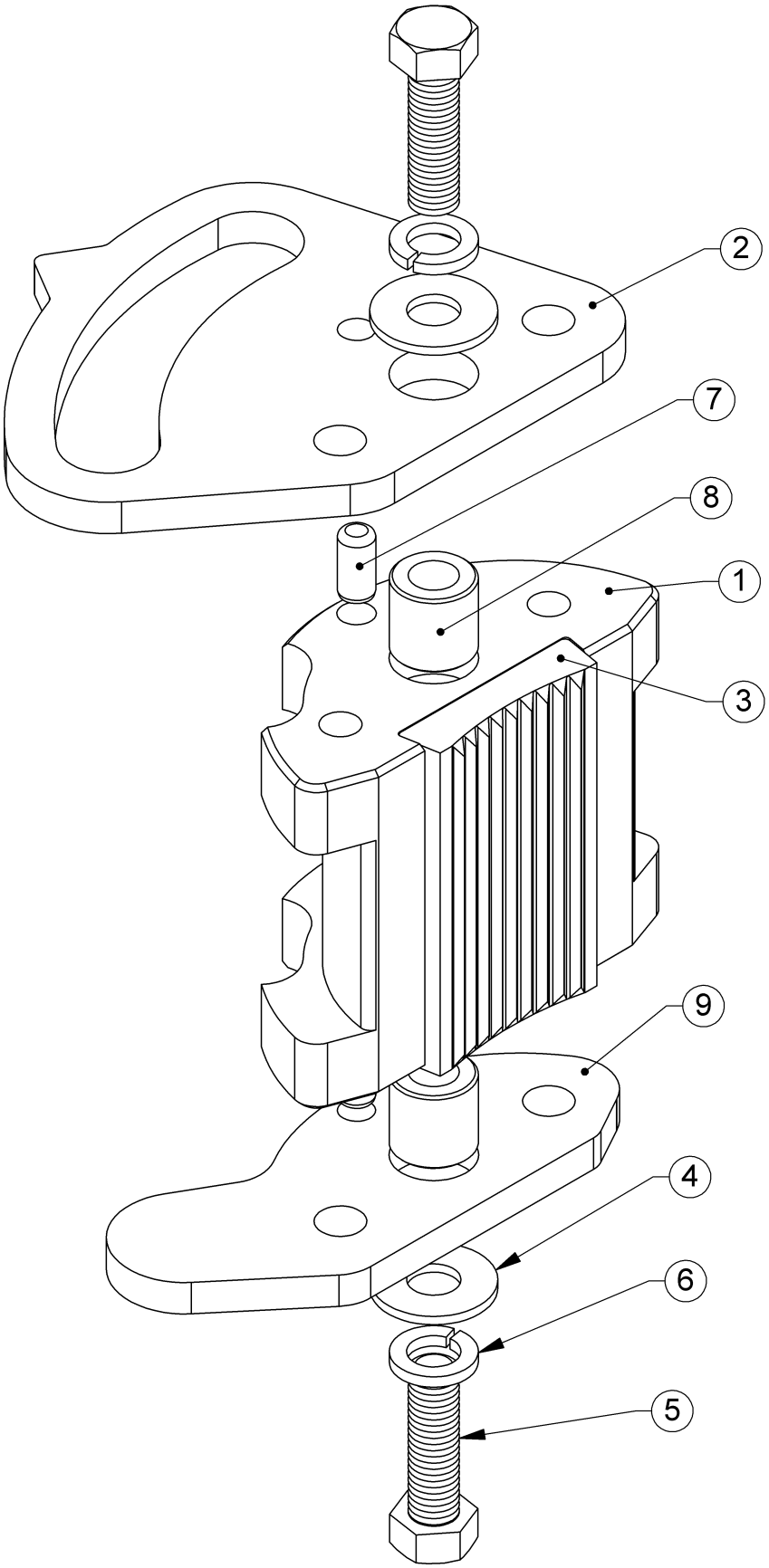
65K-2GJR Top Heel Die Holder Assembly



65K-2GJR Top Heel Die Holder Assembly

ITEM	QTY.	PART NO./DESCRIPTION	COMMENTS
1	1	30031 Die Holder, Heel	
2	1	20194 Die	
3	2	20210 Roller Assembly	
4	2	98381A622_3.8 Dia. x .75 lg. SS Dowel Pin	
5	2	20208A Spacer Bushing, Roller	
6	2	806303_1.2-13 x 3.50 Hex Bolt, Grade 8SLDPRT	
7	2	810703_1.5 Lock Washer	
8	1	30012A-2A Top & Btm Die Retainer Welded Assy	
9	1	20213A Die Retainer, Bottom	

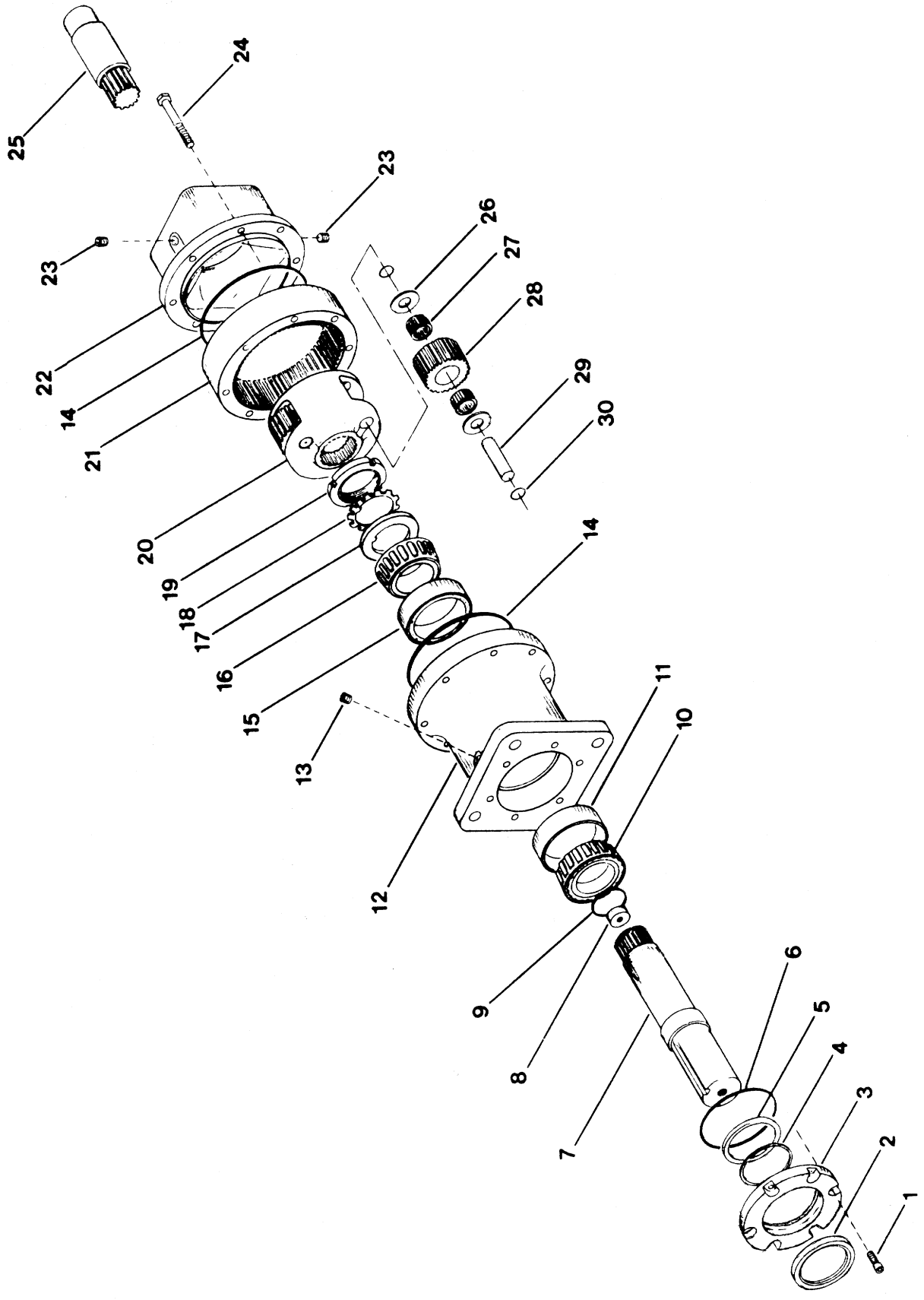
65K-2GJR Top-Bottom Hook Die Holder Assembly



65K-2GJR Top-Bottom Hook Die Holder Assembly

ITEM NO.	QTY./ASSY.	PART NO./DESCRIPTION	COMMENTS
1	1	30031 Die Holder, Heel	
2	1	30012-1 Die Retainer, Hook Top	
3	1	20194 Die	
4	2	810705_1.2 Flat Washer	
5	2	806276_1.2-13 x 1.75 Hex Bolt	
6	2	810703_1.2 Lock Washer	
7	2	98381A622_3.8 Dia. x .75 lg. SS Dowel Pin	
8	2	20208-870 Spacer, Die Holder	
9	1	20213A Die Retainer, Bottom	

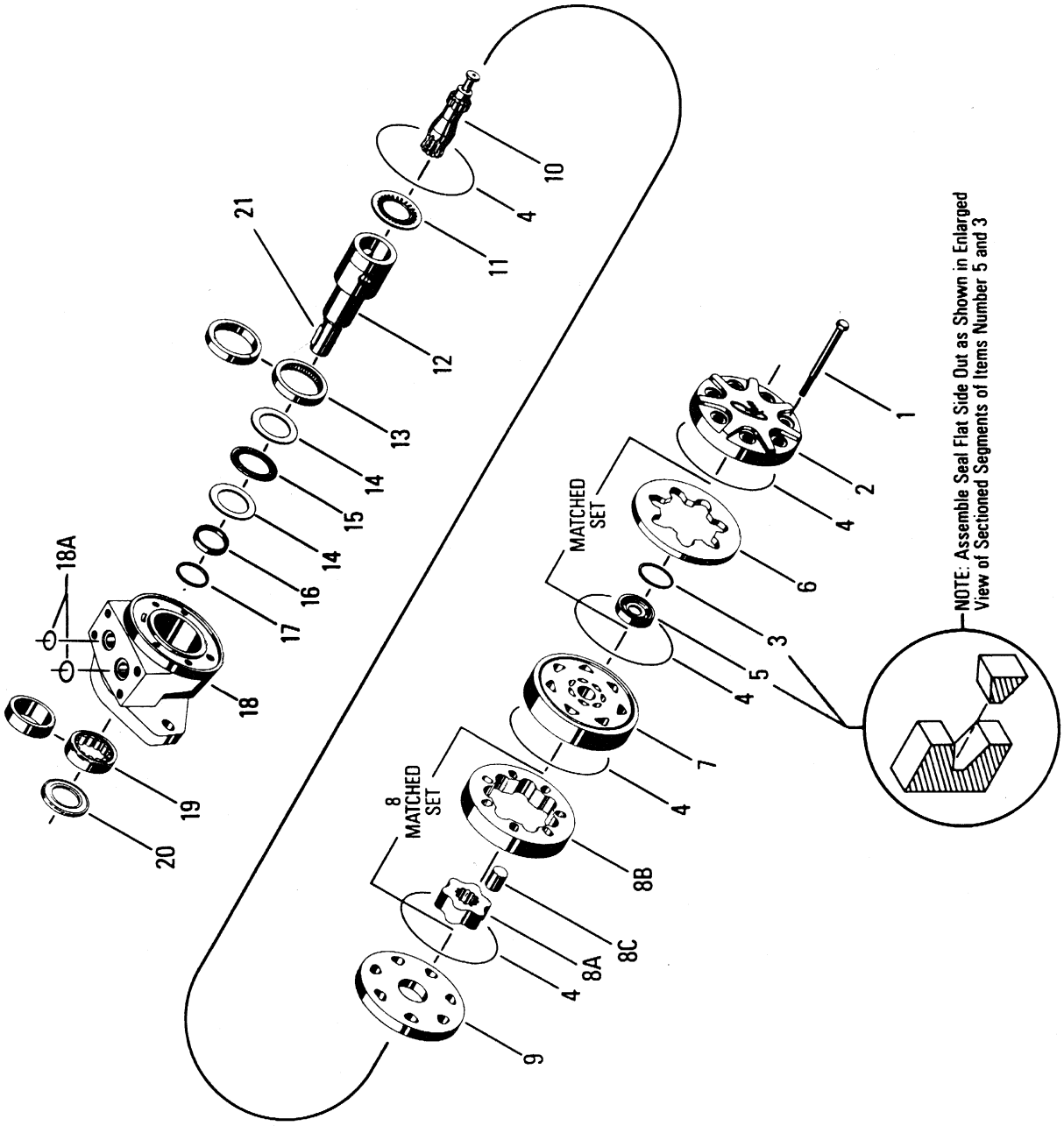
Reducer Assembly



Reducer Assembly

ITEM NO.	QTY./ASSY.	PART NO./DESCRIPTION	COMMENTS
1	1	031-R01 Cap Screw	
2	1	031-R02 Shaft Seal	Only in kit #031-24625-SRK
3	1	031-R03 Seal Carrier	
4	1	031-R04 Back-up Ring	Only in kit #031-24625-SRK
5	1	031-R05 Quad Ring	Only in kit #031-24625-SRK
6	1	031-R06 "O" Ring	Only in kit #031-24625-SRK
7	1	031-24707 Output Shaft	
8	1	031-R08 Thrust Washer	
9	2	031-R09 Retainer Ring	
10	2	031-R10 Cone	
11	2	031-R11 Cup	
12	1	031-R12 Bearing Housing	
13	4	031-R13 Pipe Plug	
14	2	031-R14 "O" Ring	Only in kit #031-24625-SRK
15	2	031-R15 Cup	
16	2	031-R16 Cone	
17	1	031-R17 Keyed Washer	
18	1	031-R18 Lock Washer	
19	1	031-R19 Lock Nut	
20	1	031-R20 Planet Carrier	
21	1	031-R21 Internal Gear	
22	2	031-R22 Motor Adapter	
23	4	031-R23 Pipe Plug	
24	1	031-R24 Bolt	
25	1	031-R25 Sun Gear Kit	
26	2	031-R26 Thrust Washer	
27	2	031-R27 Planet Bearing	
28	1	031-R28 Planet Gear	
29	1	031-R29 Planet Pin	
30	2	031-R30 Retainer Ring	

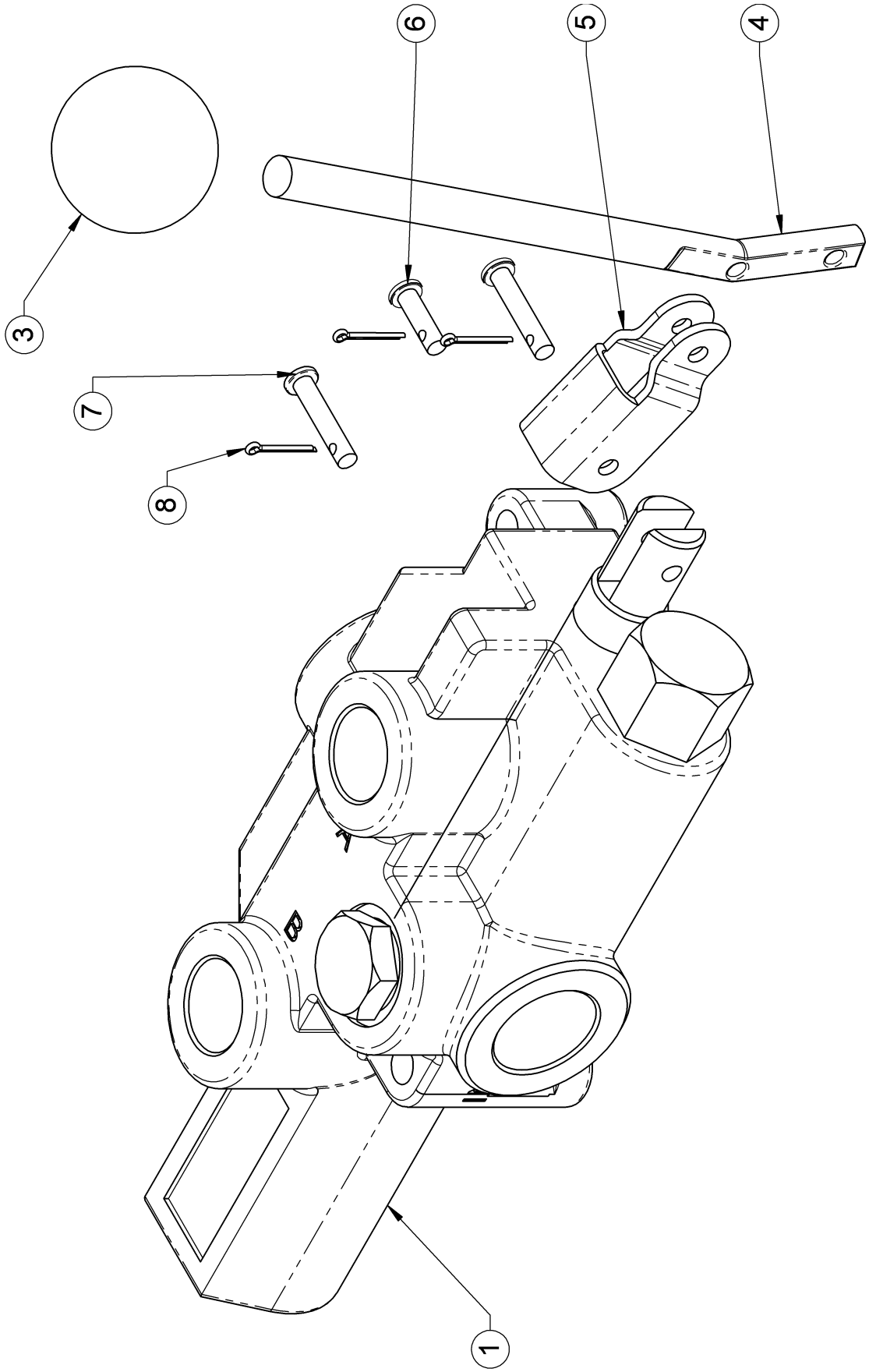
Spinner Drive Motor Assembly



Spinner Drive Motor Assembly

ITEM NO.	QTY./ASSY.	PART NO./DESCRIPTION	COMMENTS
1	7	031-M01 Special Bolts	
2	1	031-M02 End Cover	
3	1	031-M03 Seal Ring-Commutator	Only in kit #031-ME09-RK
4	5	031-M04 Seal Ring	Only in kit #031-ME09-RK
5	1	031-M05 Commutator Assembly	
6	1	031-M06 Commutator Assembly	
7	1	031-M07 Manifold	
8	1	031-M08 Rotor Set	
9	1	031-M09 Wear Plate	
10	1	031-M10 Drive Link	
11	1	031-M11 Thrust Bearing	
12	1	031-M12 Coupling Shaft	
13	1	031-M13 Inner Bearing	
14	1	031-M14 Thrust Washer	
15	2	031-M15 Thrust Bearing	
16	1	031-M16 Inner Seal	Only in kit #031-ME09-RK
17	1	031-M17 Backup Washer	Only in kit #031-ME09-RK
18	1	031-M18 Service Housing Assembly	
19	1	031-M19 Outer Bearing	
20	1	031-M20 Dirt & Water Seal	Only in kit #031-ME09-RK
21	1	031-M21 Key	

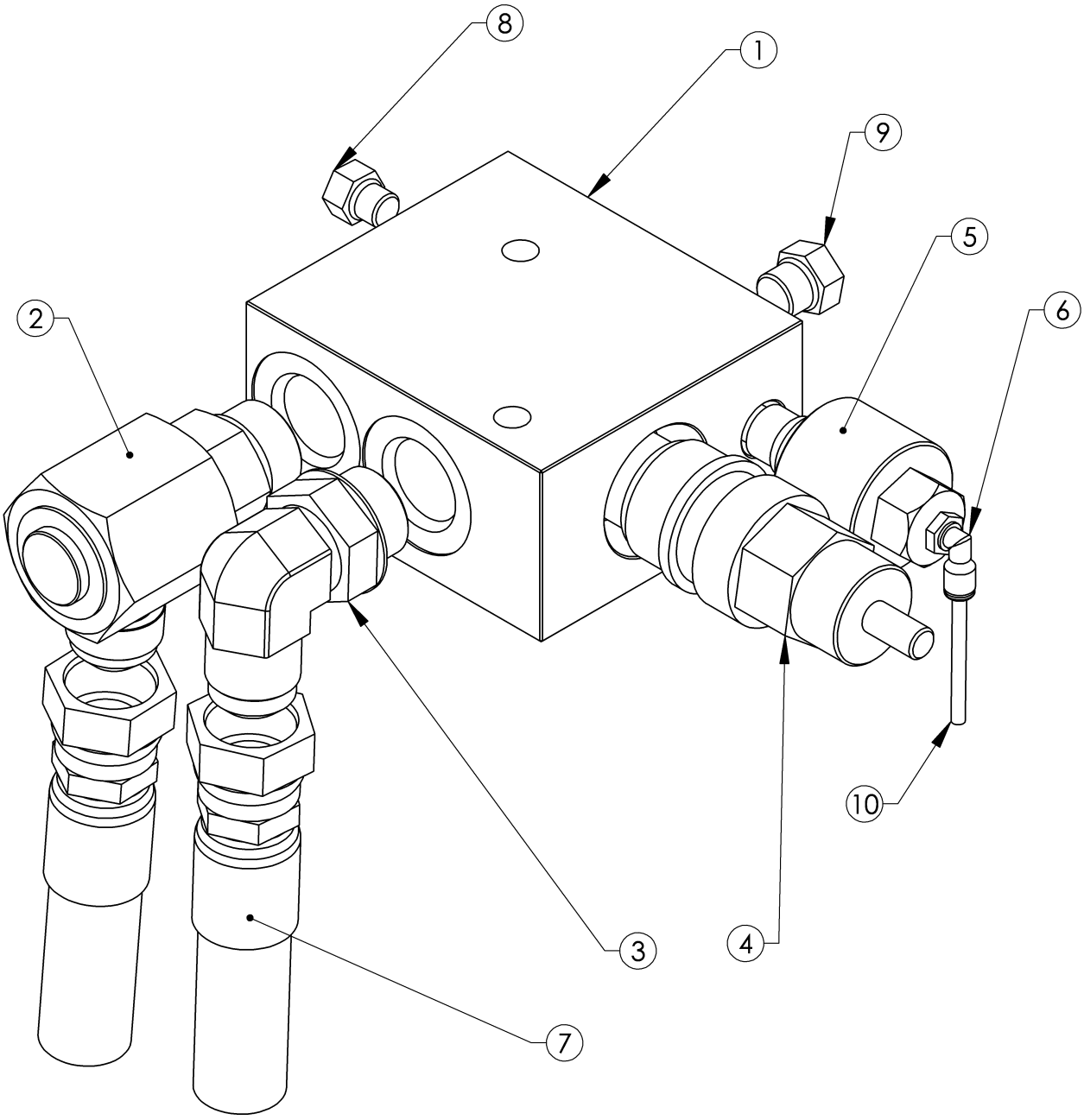
Spinner Directional Valve Assembly



Spinner Directional Valve Assembly

ITEM	QTY.	PART NO./DESCRIPTION	COMMENTS
1	1	DV Spinner Motor Valve, JR	
2	1	DV Spoon Pin	
3	1	DV21 Knob	
4	1	DV22 Handle	
5	1	DV26 Link	
6	1	DV25 Clevis Pin	
7	2	DV24 Clevis Pin	
8	3	DV23 Cotter Pin	

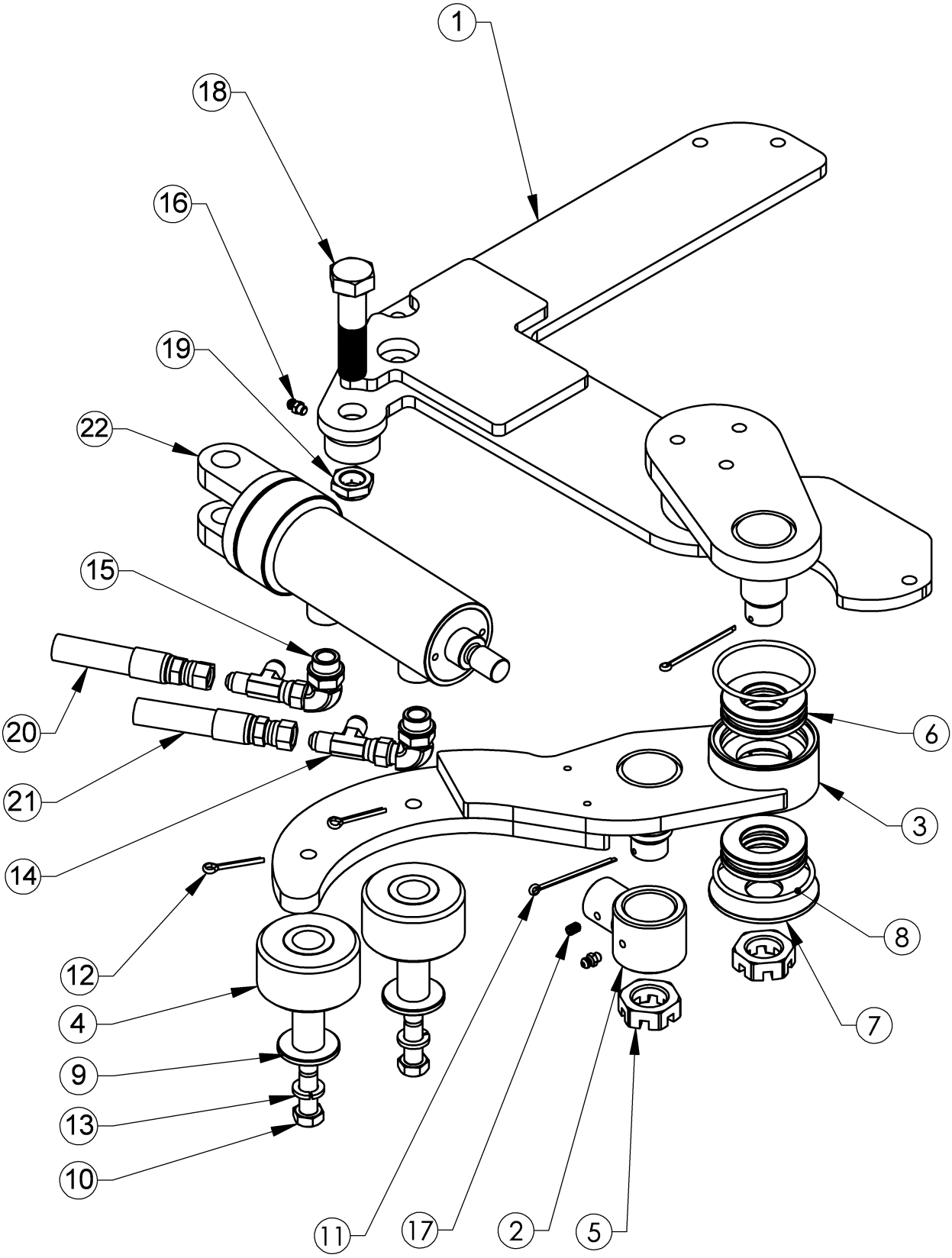
65K-2GJR Open/Closed Center Manifold



65K-2GJR Open/Closed Center Manifold

ITEM	QTY.	PART NO./DESCRIPTION	COMMENTS
1	1	10454-1 Unloader Block	
2	1	FS55021 Swivel Fitting	
3	1	2062-12-12S_12MORB x 12MJIC Fitting 90	
4	1	UV1 Unloader Block Valve	
5	1	H4B Air Piloted 2-Way Valve	
6	1	A46 5.32 x 1.8 PTC Elbow	
7	2	HOS-OPCL_-12FJICx-12FJICx36.00lg. Hose	
8	1	900598-4S_MORB Plug	
9	1	900598-6S_MORB Plug	
10	1	A40-7 Green Air Hose	

65K-2GJR Hydraulic Pipe Clamp Assy



65K-2GJR Hydraulic Pipe Clamp Assy

ITEM	QTY.	PART NO./DESCRIPTION	DESTINATION	COMMENTS
1	1	30008-32 Arm Mount Plate Wldmnt		
2	1	30008-27 Rod Clevis Wldmnt		
3	1	30008-19 Hook Assembly Wldmnt		
4	2	20210 Roller Assembly		
5	2	20229A Linkage Nut, Modified		
6	2	146 Thrust Bearing Assembly		
7	1	20029-1 Washer		
8	2	PRP568-230 O Ring		
9	2	20208 Spacer Bushing, Roller		
10	2	20045A-6 Bolt, Roller Assy 1.5-13 x 2.75		
11	2	807493-250 Cotter Pin		
12	2	807493-125 Cotter Pin SST		
13	2	810703_1.2 Lock Washer		
14	2	203102-6-6S T Fitting		
15	2	2062-8-6S_6MORB x 4MJIC Fitting 90		
16	2	1103K1 Grease Fitting, Straight		
17	1	808265_ 1.4-28 x .375 lg. Soc. Hd. Set Screw, Cup Point		
18	1	806539_3.4-16 x 3.00 lg.Hex Bolt Grd. 9		
19	1	806523_3.4-16 Flex Nut (31FK1216)		
20	1	JHOS-10-17 6FJICx-6FJICx35.00lg. Hose	Mid. Grip Cyl. Cap Side	
21	1	JHOS-9-18 6FJICx-6FJICx41.00lg. Hose	Mid. Grip Cyl. Rod Side	
22	1	HV50R2NA Cylinder, JR		